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THE AMERICAN GAS LIGHT JOURNAL

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OBITUARY.—MR. GEORGE A. McILHENNY.

On the afternoon of Sunday, October 16th, an active, useful, kindly life was blotted out in the death of Mr. George A. McIlhenny, who for a quarter of a century served the Washington (D. C.) Gas Light Company as Engineer, and since 1883 also added to his duties as Engineer those of President to the Corporation.

Deceased was born in Milford, county of Donegal, Ireland, on April 22d, 1835, and in his ninth year came with his mother—Mr. McIlhenny, Sr., died when the subject of this sketch was a mere infant—to America, landing in Philadelphia in 1844. His education was acquired in the Northwest Public School of that city, and the period devoted to his teaching was necessarily short; for stern necessity compelled him to face early the duties of life. On leaving the school he entered the shops of the Baldwin locomotive works, and from there went to the Southwark Foundry, to completely master the trade of a machinist—the late Mr. B. H. Bartol, whom Mr. McIlhenny eventually succeeded as President of the Washington Gas Company, was at that time Manager of the Southwark Foundry. This foundry was then coming into prominence as a manufacturer of gas works apparatus, and among its customers for this class of goods was the gas works building firm of Perdicaris & Hoy, with whom, we may add, Mr. John McIlhenny, a brother of deceased, was largely interested. It is also worthy of note that among the contemporaries of Mr. G. A. McIlhenny in the days of Perdicaris & Hoy were such men as the late Ambrose J. White—father of Capt. W. H. White—John P. Kennedy and William Helme, all of whom subsequently became prominent in the gas business of the country. Deceased remained with the Southwark folks until 1857, when, at the instigation of Messrs. Perdicaris & Hoy, who had been awarded the contract for the remodeling of the Charlottesville (Va.) works, he overlooked the carrying out of that contract. From there he went to Macon, Ga., and put up for that Company a complete gas plant arranged for the production of wood gas under the Cresson patents. So well did he succeed in the construction that the proprietors prevailed upon him to accept the position of permanent manager. He carried out the task admirably, and when the Civil War broke out he had the plant well in hand and the Company was prospering. During the years 1861 to 1864 he fairly stood between two fires, his interests were bound up in the works, but his belief was in the Northern cause. In 1864, however, matters came to such a pass that he had to choose between taking up arms against the flag or escaping from the city to the Northern lines. He chose the latter course, and in company with two others—one of whom is still engaged in the gas business in the far East—"ran the blockade" in safety, but only after surmounting many perils. Early in 1865 (March) he was called to Washington by Mr. B. H. Bartol, then President of the Washington Gas Company, and accepted the post of Engineer. His record since then in that post needs no word of explanation or praise from us. Let it suffice to say his care was such that the Company kept quick pace with every advance made by the city in population, wealth and importance—and the history of the growth of Washington is famous even in the annals of such advances with which the States abound. When he took charge of the plant the gas rate was $4.25 per 1,000 cubic feet, whereas now the rate is $1.25. Being of a studious disposition and possessing the further gift of a well-balanced mind, all his talents were bent on furthering the

material interests of his employers. No economy was neglected, no proposition that on its face looked to the physical improvement of the plant remained uninvestigated. Nor was he forgetful of the fact that diplomacy was an essential to the proper conduct of the business, and, acting in unison with the executive branch of the corporation, the proof of their success is shown in the fact that an opposition gas charter was never granted for the city. Shortly after his engagement with the Company he was elected President of the Analostan Boat Club, and in a few years no other man in the city was better known socially than he. His suavity, tact, gentleness and honor caused him to become invaluable to the Company. In 1883 he was elected to the Presidency, and as President-Engineer he remained to the time of his death, in fact as well as in name; although for some few years the weightier cares of the actual works superintendence were committed to the custody of Mr. Thos. G. Lansden. In 1880 he was stricken with locomotor ataxia, from which he suffered terribly, but with the greatest patience, until the end came—the absolute cause of his death was acute congestion of the kidneys.

Mr. McIlhenny was at the organization meeting of the American Gas Light Association (April, 1873), and was elected at that time a member of the Executive Committee, and also a member of a special committee to report upon the best methods of purification. He served on the Finance Committee during the period of '74 to '78, and was elected Vice-President in '79, his illness obliging him to retire on the completion of that term. He contributed several papers to the Association, notable among which were these: "Deposition of Carbon in Retorts and Means of Preventing It"—in connection with this it is worthy of remark that he devised what is known as the "McIlhenny Vacuum Process" in 1864—and the "Government of Gas Works," which paper would be a very notable one in these days for completeness of preparation. The American Association, as an especial mark of its regard and love for him, held its 12th annual meeting (1884) in Washington—he could not come to the Association, so the Association went to him. He was elected to honorary membership in the New England Association in 1887, and the Western Association paid him similar tribute in the same year. The American Association owes very much to him for its present standing because of his earnest efforts on its behalf in the early days.

As an inventor, not an adapter, Mr. McIlhenny ranked high. Besides the vacuum process before alluded to, he has given to the gas world the McIlhenny regenerator furnace, the McIlhenny self-sealing retort lid, and other minor things that time and trial have proved the merit of.

Besides all this, deceased found time to interest himself in many things local to Washington. He was President of the Belt Line Street Railroad, a Director in the Pennsylvania Avenue Railroad—it is to him that Washingtonians are indebted for the transfer ticket system which exists in that city—President of the West End Bank, and President of the Board of Trustees of the Western Presbyterian Church. He was also a member of the Masonic order. Truly, his was a busy, useful life.

Mr. McIlhenny was married in May, 1868, to Miss Virginia Thyrza Smith, who survives him. No issue resulted from the marriage, but of the paternal family there survive two brothers, Mr. John McIlhenny, of Philadelphia, and Mr. Oliver McIlhenny, and one sister, Mrs. Barr, of Washington.

The funeral services were celebrated at the McIlhenny residence, No. 2001 Q street, northwest, on the afternoon of Thursday, October 20th, the Reverend Alexander Wyncoop, of the Western Presbyterian Church, officiating. The rich and the poor, the banker and the stoker, the diplomat and the servitor were there to assist in the last rites that are paid to the dead that are mourned from the heart. And a notable feature of the great procession that escorted the remains to Oak Grove Cemetery was the cortege that followed the hearse. The marchers, some 200 in number, were employees of the Gas Company, and the acting pall bearers were also picked from the Company's attaches. Some prominent men in the gas industry were present, but were it not that the meeting of the American Association was in session in Boston at the time of the funeral services, the representation on this account would have amply attested the affection and esteem in which Mr. McIlhenny was held by the fraternity of the country.

In concluding this sketch, which has been carefully compiled, we know that we cannot add anything on our own account that will bring out more clearly the beauty and merit of the life of the deceased; but we may say that for 30 years he was personally known to us, and that we the better appreciated him as year piled upon year.

THE proprietors of the Erie (Pa.) Gas Company have determined to put in a coke crushing apparatus of the most approved pattern. This is in line with progress, and is an example that will have many imitators.

[Continued from page 623.]

[OFFICIAL REPORT.—EDITED BY THE SECRETARY.]

TWENTIETH ANNUAL MEETING OF THE AMERICAN GAS LIGHT ASSOCIATION.

HELD AT PIERCE HALL, BOSTON, MASS., OCT. 19, 20 AND 21, 1892.

AFTERNOON SESSION—OCTOBER 19.

The Association met at 2 P.M.

INVITATIONS FROM THE BOSTON AND BAY STATE GAS COMPANIES.

Mr. W. R. Addicks—I wish to extend to all members of the Association, in the name of the Boston and Bay State Gas Companies, an invitation to visit any of our stations; and as our people will not be able to recognize all the members I will say that the badge of the Association will be a pass to all parts of our works.

The President—The Chair has received a cordial invitation from the Gas Appliances Exchange, extended to all the members of the Gas Light Association, to visit their place and inspect the gas appliances on exhibition and in operation. This is a meeting under the auspices of the Boston Gas Light Company, and this I assume is a part of the invitation of the Boston Gas Light Company. The Gas Appliance Exchanges has quite a line of gas apparatus in use for the purpose of heating and cooking, and it might be of interest to us all to visit the place and examine them. We will now have the pleasure of listening to the paper by Mr. Humphreys on "The Relation of Theory to Practice."

RESOLUTIONS ON THE DEATH OF MR. GEORGE A. MCILHENNY.

Mr. W. P. Fodell—Mr. President, before that paper is read, if you will permit me, I will offer a resolution with regard to the death of our friend Mr. George A. McIlhenny. I do so because he was a warm personal friend of mine; but I feel it incumbent upon me to do so irrespective of my own sympathy. I present this resolution:

"*Resolved*, That this Association has learned with feelings of deep regret of the death of our fellow-member, Mr. George A. McIlhenny, President and Engineer of the Washington Gas Light Company, Washington, D. C., and desire to convey to his widow its sympathy in this hour of their bereavement; and to place upon record this Association's appreciation of his work. He was at once a gentleman gifted by natural talent, and qualified by study and experience in his profession, capable of directing to success his undertakings in the special field he had chosen; and withal a kindly friend, in the goodness of his heart ever anxious and willing to assist his brothers by imparting to them the fruits of his labor and experience.

"*Resolved*, That a copy of this resolution be forwarded to Mrs. McIlhenny, and entered upon our minutes."

The President—You have heard the resolution offered by Mr. Fodell, expressing the views of this Association relative to the death of Mr. McIlhenny. Are there any remarks? Those in favor of the adoption of the resolution will say Aye; opposed, No. It is carried. We will now listen to the reading of Mr. Humphreys' paper.

Mr. Humphreys then read his paper on

THE RELATIONS EXISTING BETWEEN THEORY AND PRACTICE.

It may seem to some of the members present that an apology is due from me for taking up the time allotted to the consideration of subjects falling under the special heading of gas, for the consideration of such a general question as the one I have chosen for the subject of my paper.

I shall make no apology, because I have many times in our discussions noticed the necessity for the consideration of this subject. According to some of the views we have heard expressed in our meetings, theory and practice are widely apart, opposed and antagonistic to each other; and according to these views the scientific man and the practical man, because they have studied in different schools, must necessarily always vary in their practice. By the people holding these views the scientific man is called a "theorist," and the word "theorist" is used as a term of reproach. The idea seems to be that the scientific man is *only* a man of theory, and therefore is not equipped to meet the tests of everyday life. On the other hand, we hear the technically educated man sometimes speak of the practical man as a man necessarily ignorant and poorly equipped for his work.

It is hard to choose between these two views and say which is the more cramped and partial.

This tendency, as I have said, I have noticed a number of times in our meetings. But I have also noticed it to a marked degree in societies claiming to be decidedly more technical in their papers and discussions than does our Association.

It seems, then, as if we might very profitably turn for a moment to one side from the subjects strictly pertaining to our business to consider this subject which has a bearing upon all of our regular discussions.

We are all here engaged, or ought to be, in the effort to individually progress in the acquisition of knowledge in relation to our special business; and also we are engaged, I hope, in the effort to advance the state of the art in which we are thus more especially interested; our studies, then, are necessarily largely technical. This is an age of competition, and we have our active competitors to meet; two especially, electric lighting and kerosene lighting, are making constant advances as the result of persistent, intelligent, well-directed effort.

It behooves us, then, not to handicap our own efforts by misunderstandings amongst ourselves, which at times show a tendency to take the form of jealousy as between the practical man and the technical man, but to co operate to the best of our ability, the "practical" gas engineer and the "technical" gas engineer, for the advancement of our common cause.

Let us now consider what is the relation existing between theory and practice.

Turning first to our dictionary, let us define the two terms: "Theory" we find to be—

"An exposition of the general principles of any science. The philosophical explanation of phenomena. Introduction of organization among the facts or data of science."

Other definitions are to be found, which tend to make "theory" a term convertible into "hypothesis," but these definitions are not to day to be followed in considering a material subject.

These last definitions come from the original Greek word (meaning to "look at") from which we get our English word "theory;" thus we have the definitions—

"A doctrine or scheme of things which terminates in speculation or contemplation without a view to practice; hypothesis, speculation."

This meaning of the word I will refer to again in connection with something to be said as to the views held by the ancient philosophers on the subject now under consideration.

Taking up now the word "practice," we find the following definitions:

"*Practice*—Application of science or knowledge to the wants of men. Actual performance in distinction from theory; action."

"There is a distinction but no opposition between theory and practice; each to a certain extent supports the other; theory is dependent on practice; practice must have preceded theory."—*Sir W. Hamilton.*

This last definition expresses more clearly than I can hope to, the relative meanings of the two words.

Theory, then, we find is the exposition of the general principles of any science. It is the explanation of phenomena. It is the introduction of organization among the facts or data of science. And for this organization theory is dependent on practice; practice must precede the theory.

Does this indicate opposition? Do we not here see that theory and practice are close partners? And only as close partners can they hope to work to any advantage.

Where then does this idea of opposition come from?

Let me refer to the introduction of Rankine's Applied Mechanics, in which appears his preliminary dissertation on the Harmony of Theory and Practice in Mechanics. What he says of Mechanics in general is capable of direct application to our case.

The ancient Greek philosophers, by whom the two words were contrived, and first used, placed them in opposition "as denoting two conflicting and mutually inconsistent ideas."

Rankine says:

"In physics and mechanics their notions were pervaded by a great fallacy, which attained its complete and most mischievous development amongst the mediæval schoolmen, and the remains of whose influence can be traced even at the present day—the fallacy of a *double system of natural laws;* one theoretical, geometrical, rational, discoverable by contemplation, applicable to celestial, ethereal, indestructible bodies, and being an object of the noble and liberal arts; the other practical, mechanical, empirical, discoverable by experience, applicable to terrestrial, gross, destructible bodies, and being an object of what were once called the vulgar and sordid arts."

Archytas of Tarentum illustrated the truths of geometry by mechanical contrivances, but his pupil, Plato, looked upon this as a lowering of the dignity of science.

The mechanical knowledge and practical skill displayed by Archimedes commands our admiration and profound respect. In the eyes of the learned men of his day, these were considered as accomplishments unworthy of him.

"In those days (says Rankine) the notion arose that scientific men were unfit for the business of life, and various facetious anecdotes were contrived illustrative of this notion, which have been handed down from age to age, and in each age applied, with little variation, to the eminent philosophers of the time.

"Men who, like Roger Bacon, combined scientific with practical knowledge, were objects of fear and persecution, as supposed allies of the powers of darkness.

"Not until the revival of learning and the reformation of science in the 15th, 16th and 17th centuries, was the system falsely styled Aristotelian overthrown, also was overthrown the fallacy of a double system of natural laws; *and the truth began to be duly appreciated, that sound theory in physical science consists simply of facts, and the deductions of common sense from them, reduced to a systematic form.*

"Then it came to be acknowledged that no material object, however small, no force, however feeble, no phenomenon, however familiar, is insignificant, or beneath the attention of the philosopher; that the processes of the workshop, the labors of the artisan, are full of instruction to the man of science; that the scientific study of practical mechanics is well worthy of the attention of the most accomplished mathematician.

"As a systematically avowed doctrine, there can be no doubt that the fallacy of a discrepancy between rational and practical mechanics came long ago to an end; and that every well informed and sane man, expressing a deliberate opinion upon the mutual relations of those two branches of science, would at once admit that they agree in principles and assist each other's progress, and that such distinction as exists between them arises from the difference of the purposes to which the same body of principles is applied.

"If this doctrine had as strong an influence over the actions of men as it now has over their reasonings, it would have been unnecessary for me to describe, so fully as I have done, the great scientific fallacy of the ancients. I might, in fact, have passed it over in silence as dead and forgotten, but unfortunately, that discrepancy between theory and practice, which in sound physical and mechanical science is a delusion, has a real existence in the minds of men; and that fallacy, though rejected by their judgments, continues to exert an influence over their acts. Therefore it is that I have endeavored to trace the prejudice as to the discrepancy of theory and practice, especially in mechanics, to its origin; and to show that it is the ghost of a defunct fallacy of the ancient Greeks and of the mediæval schoolmen."

But Rankine further on acknowledges that in England at the time of his writing (1856) "of that scientifically practical skill which produces the greatest effect with the least possible expenditure of material and work, the instances are comparatively rare."

But in the year 1892 we can see that great progress has been made in this direction, and while there is now, as there always will be, room for the great engineer, the leader, still there is now an army of engineers well trained practically and scientifically.

Again I quote:

"In too many cases we see the strength and stability which ought to be given by the skillful arrangement of the parts of a structure, supplied by means of clumsy massiveness, and of lavish expenditure of material, labor and money; and the evil is increased by a perversion of the public taste, which causes works to be admired, not in proportion to their fitness for their purposes, or to the skill evinced in attaining that fitness, but in proportion to their size and cost."

I now will quote a passage which only of late years have I duly appreciated. The many interviews with "patent cranks" which during the last ten years I have been called upon to endure, have helped to cultivate in me this keen sense of appreciation:

"Another evil, and one of the worst which arises from the separation of theoretical and practical knowledge, is the fact that a large number of persons, possessed of an inventive turn of mind and of considerable skill in manual operations of practical mechanics, are destitute of that knowledge of scientific principles which is requisite to prevent their being misled by their own ingenuity. Such men too often spend their money, waste their lives, and it may be lose their reason, in the vain pursuit of visionary inventions, of which a moderate amount of theoretical knowledge would be sufficient to demonstrate the fallacy; and for want of such knowledge many a man who might have been a useful and happy member of society, becomes a being than whom it would be hard to find anything more miserable.

"The number of those unhappy persons, to judge from the patent lists, and from some of the mechanical journals must be much greater than is generally believed.

"The most absurd of all their delusions, that commonly called the

perpetual motion, or to speak more accurately, the inexhaustible source of power, is, in various forms, the subject of several patents in each year."

What would Prof. Rankine think if alive now and a subscriber to our gas journals? Do we not all recognize the ignorant patentee he is describing? Have we not nearly all had experience with such men? In our case the perpetual motion idea takes the form of getting from a given amount of gas making material an amount of gas of certain calorific value which shows the product to contain many more heat units than was originally contained in the raw material from which it was produced.

I was recently asked my opinion on a process in which the heat units of the raw material were to the heat units in the gas produced therefrom as 29 is to 160, and I have had many more cases as bad as this brought to me for investigation and some of them worse than the one quoted.

Again I quote:

"Some of the evils which are caused by the fallacy of an incompatibility between theory and practice having been described, it must now be admitted that at the present time these evils show a decided tendency to decline."

It is a pity that with such a decided tendency to decline in 1856 that more progress is not noticeable in the year 1892. Or rather it is a pity that in the year 1892 there should be found men occupying positions of importance, who, on the one side regard the theoretical man as necessarily an unpractical man and a dreamer, and on the other side, men who regard the practical man as necessarily ignorant and incompetent.

The fact that this trouble does exist in the form and to the extent we find it, it is to be ascribed not alone to the fallacy handed down by the ancients, but to the narrow views to-day held by some of the men themselves in these two classes. On one side the ignorant practical man, who cannot bring himself to acknowledge the worth of a training he has not enjoyed; and on the other side the narrow minded specialist and bookworm, who has his brains filled with a knowledge he cannot put into practice and is too well satisfied with his own attainment to ever find out his own ignorance, except by some bitter experience. These men, on both sides, if given the necessary amount of self-assertion, air their views sufficiently often to at least keep alive the fallacy of the old philosophers to which I have referred.

But now let us consider more particularly what are the proper relations between theory and practice. I again quote from Rankine—

"Mechanical knowledge may obviously be distinguished into three kinds; purely scientific knowledge, purely practical knowledge, and that intermediate knowledge which relates to the applications of scientific principles to practical purposes, and which arises from understanding the harmony of theory and practice."

If we would stop and consider the full meaning and bearing of this statement of Rankine's, nothing more would be required. But we will not thus always stop and consider. The same truth must be dressed out in different forms to attract the attention of different minds. "The harmony of theory and practice" is thought by some to be disproved because apparently some theory is not borne out by practice. Perhaps the lack of harmony in this case may proceed from an incorrect theory, or it may proceed from the fact that a correct theory is incorrectly or even incompletely stated. Or, again, it may proceed from an incorrect reading of the theory, *or from an incorrect or incomplete test of the theory by the practice relied upon for the basis of the criticism.*

Even if we should accept as the definition of theory, "A doctrine or scheme of things which terminates in speculation; contemplation without a view to practice; hypothesis;" we should even then only be forced to change our terms and find some other way of describing the work and aim of the practical scientist. It is the work of the latter to establish the laws governing the forces with which he has to contend and with which he has to work. By using the experience of everyday practical life, observing the results closely and recording them accurately, and analyzing logically the results thus recorded, a law is established which enables the man coming after him, who is interested chiefly in the practical results, to do the greatest amount of the best work in a given time. As years go on, and the work of other practical scientists is added to that of those gone before, the laws as first given out may be modified or amplified; but that does not prove the uselessness of the effort to establish the laws, but, to the contrary, points to the greater necessity for their establishment. But when we refer to the modification and amplification of some of these laws, let us not give cause for doubt in the mind of those who have not looked closely into the subject. To disprove the impossible results claimed by the gas patent crank there are certain fundamental laws which have been established for years and years, and which have not been modified or changed in the slightest degree, but, to the contrary, have only been intrenched more and more securely in the citadel of truth by the work in all branches of science year after year of the scientists of the world.

And why should the distinctively practical man deprive himself of all credit in this direction? It is the practical man—that is, the man who works at his trade or calling and studies by observing the results obtained in his work rather than in books—who has done work of the greatest value in this very direction of research. And yet perhaps some of these very men would speak with a sneer of theory as being opposed to practice.

Take such a practical man, who perhaps has never studied in books anything more than the rudiments of a school education, but is blessed with the faculty of observation and a logical turn of mind. He wants to improve in his practice, and so tries to systematically gain by experience. He commences to record his work and his results. Then, perhaps, in some homely way of his own devising, he commences to tabulate his results, so as to be better able to compare and analyze them and draw deductions from them. Finally he determines that the best results will be obtained if he follows a certain line or path; that is, he has for himself been establishing the law governing the special piece of work in which he is chiefly interested. But perhaps his work does not enable him to consider all the points bearing upon the question; here, then, he could be helped by comparing his practice and his tabulated and digested results with those of others engaged in the same line. But, according to some, he would then be almost open to the charge of being a "theorist." But the theorist not only compares the results obtained by a few men, living in one country and one age, but tries to use and digest the recorded results as obtained by the workers of all countries and in all ages, and from the facts thus given establish the law absolutely governing the case; that is, he tries to discover the truth and state it in convenient form.

That there are men of the schools who ignorantly close their eyes to the real purpose and value of study and research, does not change the facts as stated. Nor does the fact that there are such men, who foolishly despise the intelligent work of the practical man, give a warrant for regarding educated engineers as dreamers and speculators. An engineer must be a practical man; but he must also be educated in the theories of his profession, and he must be so educated that he can sort out the pure metal from the dross, and be able to detect fallacy when palmed off as a correct theory.

The engineer of to day, and still more the engineer of to morrow, must be trained in the theory and the practice of his profession; that is, he must be acquainted thoroughly with the laws which will govern him in his work (no matter how he may try to avoid them), and he must know how to practice in harmony with, and avail himself of those laws. Here would appear to come in the question as to how much of the theoretical or what can be gotten from books, and how much of the practical or what can be gotten in the shop, should be united to make up the educational equipment of the student engineer.

It is hardly within the province of this paper to take up this question, except to claim that there must be such a blending of the two forms of training as to fit the engineer to take up his life's work. In general, however, I believe the engineer does not need to be the finished mechanic; but he should know fully as to the uses of, and the results to be obtained from, all classes of tools employed in his special line (if he is a specialist, as he probably will be), and be able to say how a piece of work should be done and how it should not be done.

In conclusion, let me ask you to think for a moment what would be the result if we had such a harmony of theory and practice that all the truth discovered and put into tangible form by the scientist could be at once applied by the practical man, and all the facts and results obtainable from the work of the practical man could be at once digested and tabulated by the scientist. While we have had eras of most rapid progress, no such era of progress has ever been dreamt of as this would give. It is such a harmony of theory and practice that we, the members of this Association, should do our best at all times to promote.

I close by quoting the last paragraph of Rankine's dissertation, already so copiously drawn from:

"Thus it is that the commonest objects are by science rendered precious; and in like manner the engineer or the mechanic, who plans and works with understanding of the natural laws that regulate the results of his operations, rises to the dignity of a sage."

Discussion.

The President—You have no doubt enjoyed the pleasure of listening to his paper, and I know that Mr. Humphreys will be pleased to answer

any questions. If any gentleman desires to discuss the ideas presented by Mr. Humphreys we will be delighted to hear from him.

Mr. A. E. Boardman—I would like to ask Mr. Humphreys what his idea is in regard to candidates for the engineering profession—whether the candidate should get some practical experience before he goes into the schools, so that he may know something of the problems that will be presented to him, and pay particular attention in his studies to elucidating them; or whether it is better for the student to enter the schools and get his theory, and after that, by experience in the works, find out where theory and practice have to be reconciled. In my individual experience I may say that I believe that if I had had some little practical experience before going into the schools I might have saved myself a good deal of time in running after theories—I might say visionary and impracticable studies; and might have devoted myself more particularly to those branches of engineering which relate more particularly to our profession. The time has gone by when a man can be a universal engineer; and it is well for a young man early in life to determine to what particular branch to devote his entire energy; because the specialist is the one who is the most successful, and who does the most good in his profession. I would like to know, as the result of Mr. Humphreys' observations, what he thinks is the best plan to adopt, and to advise young men to adopt who are seeking information in that respect.

Mr. A. C. Humphreys—In answer to Mr. Boardman I would say that I think to a very large extent it depends upon the man himself. I think there are many who would find it very much more profitable to first go to the schools, and from there graduate, if you will, into the workshop. I think that in other cases it needs the actual contact with practical problems to cultivate in the mind of the man the desire for study. With some the desire and the taste for study needs no development—it is there; but in others they have got to meet some of the problems and find out the difficulties before they are willing to take the trouble of the effort to overcome them. So that I think it depends largely upon the man. I have thought of this particular question a great deal myself, but have been unable to come to any other conclusion than this—except that I would qualify it in this way—that it depends also to a great degree upon the school or college selected. I believe to day that the young men of America can go to certain schools where it will not be necessary for them to have that preliminary knowledge of the workshop, provided they already have some taste for study. I believe that there are schools where, as the subject is presented for study, you can also have a sufficient amount of practice presented as a proper accompaniment. I will say also, with regard to my own personal experience, both as being to some extent interested in educational matters and as having had experience with so many cadet engineers, that from my experience I cannot establish any fixed rule. Some of these cadets went through college first, and some had experience in the workshop first; and the final result obtained from these men confirms what I have now said—that it largely depends upon the man himself.

Mr. A. B. Slater—The title of Mr. Humphreys' paper reminds me of one of the most remarkable instances of theory against practice that ever came to my knowledge. At a certain works in this country a member of the Board of Directors was one of the most eminent scientists of the country, and he was also a committee on the works. He had one of the best laboratories, probably, in the country. He would work up his scientific theories in the laboratory, and endeavor to have the superintendent carry those out; and it resulted in melting the dip-pipes of the hydraulic main, filling the main full of pitch, and also the tar wells so full of pitch that it had to be dug out; and as a result the superintendent got disgusted and resigned. That was not because there is no relation between theory and practice, but it was because the theory was based partly upon unscientific principles (although by one of the most eminent scientists of the country), and could not be worked out in practice.

Mr. Littlehales—It is almost as hard a matter to decide this question as to decide the old problem as to which was the first—the egg or the chicken. There are certain departments of our profession where I think the theoretical knowledge should undoubtedly precede the practical. Take for example those questions that come under the head of chemistry, where, unless the student knows a few of the elementary principles of chemistry, he will have but a very poor appreciation of what is involved in gas purification and matters of that kind. So, therefore, in that respect, I would say most emphatically, speaking from my standpoint, that theory should precede practice, because it will help the student then to go into the practice more thoroughly. Take the experience in most machine shops, for example. I know that in New England the usual course is, when a pupil joins an engineering establishment, in the first place to put him into the drawing office, and keep him there for awhile until his own mind can begin to realize how to see things in section, and that sort of thing; and when he has once battled with that he is better fitted then to carry out those ideas in practice. The trouble is that some times in theoretical matters it may be carried too far. If you can only just apportion them properly and fairly, a fair amount of theory with a fair amount of practice, I suppose that would be the best thing to do. I certainly would be in favor myself of a good theoretical grounding before the practice.

The President—This seems to be too fruitful a subject for your consideration to be passed over slightingly. Does any other gentleman desire to offer any suggestions or thoughts in connection with the paper?

Mr. F. H. Shelton—I would like to repeat a conversation I heard this morning relative to "theory." One remark was that it was a tough subject to handle. I think that is true, because there are very few definite points that we can discuss fully and to our satisfaction. But the remark which I wish to emphasize, and which I will repeat upon the authority of one of the most prominent men of Massachusetts, is that it is handled in this paper in a "scholarly manner." I think we will all agree as to that.

Mr. A. E. Boardman—I think, as has been suggested, the matter has been handled in a very scholarly manner, and there are no points about which we can vary with the writer in opinion. Therefore, there is very little room for discussion; and the discussion up to this point has been simply as to what it is best to advise those who are seeking to enter our profession. I think the whole subject is very well covered in the paper, and I move a vote of thanks to Mr. Humphreys for his very interesting and instructive paper.

Mr. James M. Starr—The old saying is that "practice makes perfect."

Mr. A. S. Miller—I do not know whether the Association, or rather a good many who do not appreciate the worth of theory, quite appreciate the importance of a little theory when called upon to handle the patented processes. It is a very hard thing to undertake to analyze your coal, and the air that goes into the gas, and figure out in that way the heat units of the gas; but a man with very little theory can take the amount of heat in his coal, or in his oil, and figure out from that how much heat there ought to be in the gas. If a man comes and says that he can make so much gas out of a pound of coal, or that he can make seven or eight thousand cubic feet out of a pound of coal, or seven or eight thousand cubic feet out of a gallon of oil, and then figures out that he only has 30 heat units to a foot, to an absolutely practical man that would be nothing, perhaps, but to a man who had put his mind into his practice, or to a man who had a little bit of theory, that would mean a great deal, and might save him a good deal of thought and a good deal of time. That is, if he has put in practice just a few of the tests given in the books it might save him a good many hours of thinking over that thing and worrying his mind about it.

Mr. A. C. Humphreys—In conclusion I want to say a few words. Mr. Littlehales has made some remarks specially referring to the subject of chemistry. I agree with Mr. Littlehales that that is an important branch of study, and should be taken up; but I do not think it would be well to allow the members to go away with the idea that, because a man has got a certain amount of chemical knowledge, he is thoroughly equipped theoretically for the gas business. On the contrary, I think, if you summed up the whole of this subject, that chemistry, strictly defined, would not be as important a feature comparatively as would at first appear. Take, for instance, a question of thermo-dynamics. If you are not qualified to take up a question of that kind, then you are not properly equipped theoretically for the gas business. Or, take a question of construction—the studies that generally go under the head of civil engineer studies, as well as mechanical engineers' studies—such questions as pertain to bridges, roofs, etc. All those subjects have got to be pretty well understood and the ground work laid by a man who wants to be thoroughly up in the profession of gas engineering. I have supposed all along that we were men who wanted to become specialists—not simply mechanical engineers, or civil engineers; but we have to go still further in the direction of specializing and become gas engineers. And I hope that the gentlemen have not understood me in the paper to claim that because a boy goes to college and graduates therefrom, and comes away with a "sheepskin," he is therefore a *gas* engineer. Very much to the contrary. He has then got to learn the business; he has then got to take up the practice; he has then got to go into the workshop, or into the gas works, and actually do and learn. But he is, by his college training, equipped to learn as a specialist to the best advantage. As Mr. Starr has said, practice makes perfect. The theoretical man has got to have that just as well as the practical man; but I think he can practice to better advantage in a majority of cases. There are some men who have a good idea of theory

without knowing really how they acquired the knowledge; but we are not speaking of those exceptional cases, but are speaking of the ordinary run of mankind. I quite agree with what Mr. Miller has said with regard to the investigation of new processes. There can be no question as to the value of theoretical training in that connection. After all, I have made no claims except that there should be a harmony of theory and practice. I am not arguing for theory as against practice. If it is supposed that I am, then the whole object of my paper is defeated, and I have not succeeded in doing what I started out to do. It is true that the practical man has his field, and that the theoretical man has his field; but I claim that those two fields should come together, and that the successful gas man of to-day, and more so of to morrow, is and will be the technically educated, practical engineer.

The thanks of the Association were voted to Mr. Humphreys for his paper.

The President—We will now listen to the paper by Mr. George Osius, entitled "The Saving and Proper Concentration of Gas Liquor."

Mr. Osius then read the following paper:

THE SAVING AND PROPER CONCENTRATION OF GAS LIQUOR.

Considerable more interest has of late been manifested in the proper and economical utilization of crude gas liquor, than was observed a few years ago, and for that reason a short discussion on this subject—with governing conditions in the manufacture of coal gas—may be considered timely and acceptable.

Many reasons for the development of a comparatively new industry, as is the production of a marketable ammoniacal liquor, might be advanced. Not only does the more universal saving of the liquor owe its development to the adoption of the manufacture of oil gas by numerous gas works, neither may the continuously decreasing prices for your main product be solely considered accountable for establishing additional resources of revenues.

Competitive conditions, of course, are not to be underestimated, and may be largely responsible for a state of economy at which we would have frowned in times of "two and three dollar gas."

A far more flattering motive is breaking the lines, advancing with the progress of our age, and standing side by side with our endeavors to give good light, and more light at low prices.

It is the desire to save from waste what our predecessors accept as a burden, and this endeavor has often proved the creator of far greater results than was originally anticipated, and time has advanced a "Waste" to a "By product."

In the gas industry, as in most branches of industry, some made a proper use of gas liquor many years ago, and were progressive in advance of their times. Science and their ingenuity were their guides in drifting into a branch of a business which at that time was not developed enough to warrant its increase on an independent scale.

Sulphate of ammonia and even aqua ammonia were produced by gas works under such conditions with more or less profitable results and thus added a small chemical works to their gas works. Further developments of the ammonia industry have induced some gas works to abandon the manufacture of ammoniacal products, more than the concentration of the liquor, and others adopted the process of concentrating from the beginning. Thus the manufacture of ammonia drifted more and more into specific channels and gas companies now find a ready and more profitable market for their concentrated liquor in its unrefined condition.

It is generally conceded that gas works are operated for the purpose of manufacturing gas and not gas liquor, and they place therefore perhaps not as much importance to the production of their ammoniacal liquor as they proportionately will to economical and high results in the yields of gas. While the former may be considered as proper, it must also be admitted that if a matter is worth doing at all, it is worth being done thoroughly, and where the liquor is saved, all precautions must be applied to make it a success to the widest extent. It should not be considered then any more as a necessary evil, to transform liquor into utility for the purpose of choosing from two evils the lesser.

If science and ingenuity in all directions are liberally employed to aid in producing the main product as good as possible, in preparing it as cheaply as possibly, and in creating as large a demand for it as advisable, why should we not do likewise with a waste, thus placing it on the list of remunerative by products? If it is valuable enough to subject it to a process of manufacture, its manipulations should be carried on with just as much observance to high yields, quality and economy in its saving.

Gas liquor as a by-product must receive some attention, or the "leakage" exceeds the "output," and the time spent in its care could be better employed in preparing a good outlet to the sewer.

Most care should be given to a thorough washing of the gas, as there is the starting point for final results, and a two-fold gain is made. Not only that main aim of freeing the gas of its ammoniacal parts is thus accomplished, but the scrubber and washer can deliver here only what the retorts produced. It cannot be the concentrating apparatus that can establish the yields of ammoniacal liquor per ton of coal carbonized, as little as the quality of gas coal will make the yields of gas.

As all are familiar with the procedure of thorough scrubbing, and will readily observe the importance to my subject, I will pass these preliminary manipulations and give some attention to the proper concentration of the crude product.

Knowing that the employment of weak gas liquor, coming from the hydraulic main and condenser, is most suitable for washing the gas in tower scrubbers and other systems, mainly for the purpose of doing auxiliary work in advance of purifiers, and extracting a large proportion of the sulphur, I have in most cases favored this method, not only that the bulk of the producing liquor is decreased in favor of strength, but it has caused considerable saving in purifying material, whatever may be used for this purpose.

The average strength of ammoniacal liquor produced in the hydraulic main is about 2 oz. and as it would not be economical to concentrate such weak liquor, its strength may be easily increased to 5 oz. and more, depending upon the repeated run through the scrubber. It is therefore entirely within control to produce such a strength in the crude liquor for concentration, as the capacity of the scrubber may allow.

A well constructed apparatus should be able to convert a two or three ounce liquor into 50 or 60 ounce strength without trouble, and as high as 80 ounce with stronger liquor, if proper provision for a large circulating surface is observed.

Before the liquor is allowed to pass into a column, the still tank and column are slowly heated by means of open steam which enters through a perforated pipe at the bottom of the still tank. After this is accomplished, the liquor, having a fall of about four feet, runs into the upper sections of the column, which are provided with proper seals, from one section into the next, until it reaches the lime pocket of the first pan in the still tank; it overflows there from one pan upon the other until it drips into one of the lowest chambers, No. 1, of the still tank. Throughout this passage of the crude liquor, the perforated pipe, as mentioned above, has supplied a small portion of live steam, which has found its way into the opposite direction as described. In passing upwards and between the pans, it reaches the lowest section, and finds its way through a center opening in the column, until the top section is reached.

Both the crude liquor and the steam have now reached their destination in their respective ends of the journey, and both have served their purpose.

The steam heat has liberated all free NH_3 from the crude liquor, being contained at the time of its introduction into the upper section, the strongest gas liquor having been brought into contact with the expended steam in the column, and the live steam treating such liquor in chamber No. 1, which has given up most of its NH_3, before reaching the chamber. From this the thoroughly boiled liquor overflows into chamber No. 2, and from there by means of a specially constructed seal into the sewer.

The steam and NH_3 have formed during the process a vapor of about 180° F., which now passes from the last two sections through a pipe into a coil, submerged into water, which should be kept at a temperature consistent with the desired strength of the liquor. After the proper cooling has taken place, the former vapors have condensed and collected in a tank provided for that purpose, or, at the same time, for a general storage tank.

As the temperature of this condensed, or now properly called concentrated liquor, is so high that the liquid will not hold all ammonia gas, it will be necessary to provide for a second tank, usually a small one, partly filled with fresh water, for the purpose of absorbing such gases which the over saturated liquid could not retain. This second absorption is best led into the crude liquor storage tank whenever too strong to facilitate absorption readily.

As heat is the main agent of the concentration of crude liquor, the working capacity of the apparatus may be advantageously increased by leading the crude gas liquor, before being introduced into the column, either through the waste discharge coming from chamber No. 2, or by passing the supply liquor pipe around the two or three upper sections. In the latter case a double advantage will be gained.

The supply of crude gas liquor, as well as a corresponding amount of steam, will regulate the strength of the final product and may be held

as desired, but care should be taken that not too strong a liquor is produced, as the presence of a large proportion of carbonates may lead to a formation of a "salt," which would obstruct further operation until dissolved again by a little steam, connected at the proper place for the purpose. However, if proper attention is given to a uniform temperature, easily regulated by a good steam pressure regulator, this annoyance will not take place.

The most desirable strength in the manufacture, as well as for storage and shipment, is about 60 ounce strength; a much higher liquor would prove too favorable for escape of the gas, and the transportation of weaker liquor would involve proportionately higher freight expenses.

As in most cases very little attention is given to the fixed ammonia in the crude liquor, such as ammonium sulphite, ammonium chloride, ammonium sulphide and others, I have in the above not considered an application of lime to free the fixed ammonia from the crude liquor. However, a perfect apparatus, such as described above, will easily permit the employment of lime, which, of course, would somewhat increase the quantity of ammonia produced from the crude liquor. Should this be adopted in addition to the above manipulation, a quantity of fresh lime is slacked to a thin solution in a small tank connected with a little steam, to maintain a slight but continuous agitation.

The solution is continuously injected into the pan pocket of the still, where it is mixed with the gas liquor passing from the column into the pocket. This mixture is carried through its natural agitation over the pans into chambers Nos. 1 and 2, and passes out with the discharge after it has solved its requirements.

My experience has repeatedly shown that little is gained by application of lime where comparatively small quantities of crude gas liquor are produced, and it is therefore not universally applied. While the operation before mentioned is so simple, and connected with almost no expense of operation, or further employment of extra labor than already at the command of the superintendent, the latter addition would require the preparation of lime to the proper proportion of the fixed ammonia in the crude liquor, outside of the expense of the lime, and varying in different localities. The gross gain over the first method is, of course, dependent upon the condition of the crude liquor, and this again is governed by conditions at the respective gas works, together with the quality of coal employed.

It would be of no further advantage to dwell on details which must be observed in the operation of an apparatus as described above, as such are governed largely by local conditions and circumstances, varying in every case.

The concentrated liquor is best stored in large iron tanks, to be placed over ground in a cool place if possible, from which its contents may either be conveyed by pump or its own gravity into tank cars or drums.

Care should be taken to avoid any possible opportunity for escape of the ammonia gas, as the smallest opening will at once reduce the strength of the liquor and consequently result in a serious loss.

The manufacture of concentrated liquor is surely to be recommended to gas works in preference to the production of other ammoniacal products, as simplicity and economy are prevailing advantages to them in anything that cannot be considered directly applicable to the manufacture of gas.

Discussion.

Mr. W. H. Pearson—I would like to ask Mr. Osius why he does not recommend gas companies to make the anhydrous, and not simply the concentrated liquor.

Mr. Osius—In making anhydrous ammonia, this would come in the same class mentioned here as aqua ammonia. It would involve at first a separate plant, and would require you to add to the gas works a chemical works. Anhydrate ammonia is the last product of ammonia made from gas, and is that product which involves and requires the most care, and very careful attention in every respect. I know of no gas works attempting to make anhydrous ammonia, because it involves chemical works and chemical workings in every respect.

Mr. W. H. Pearson—Then the expense and trouble connected with it would be too great for any one gas company to undertake?

Mr. Osius—I believe that it would be, because the investment required is a very large one. Outside of the cost of erecting the plant, and outside of the money invested in the plant, it requires a large amount of laboratory work; and this alone would send the cost up into the thousands.

Mr. W. H. Pearson—What difference would there be in the expense of a plant for manufacturing the concentrated ammonia and one for manufacturing the anhydrous?

Mr. Osius—A plant for concentrating the liquor would simply consist in one or two tanks, according to the capacity required by the plant. This of course is a matter of comparatively small expense, varying according to the capacity of the works; while the manufacture of aqua ammonia, and much more so of anhydrous ammonia, involves not only that expense, but also the expense of purification tanks, and of a whole plant for proper purification; and after that the compression of the gas again, and a large amount of cylinders and packages in which the anhydrous ammonia is shipped.

Mr. W. H. Pearson—Then you would recommend that a gas company simply make a concentrated ammonia liquor and send it to the ammonia manufacturers for conversion into the anhydrous?

Mr. Osius—I would say so, unless they prefer to venture into the manufacture of chemicals. In that case it would be a different question altogether.

Mr. C. H. Nettleton—I would like to ask Mr. Osius to state the average price that is paid for 60 or 80 ounce liquor in the West, or say in Ohio or Indiana. Of course this matter all resolves itself to the question of dollars and cents. We do not want to invest in a plant for concentrating liquor unless there is sure to be a fair return on the capital invested.

Mr. Osius—Of course, it is very difficult to state prices here. The price varies on account of localities and distances to be traveled, and perhaps more or less because of competition as well.

Mr. C. H. Nettleton—Can you tell the net result that a gas company can hope to obtain by putting in a concentrator?

Mr. Osius—I may state it in this way—that, provided proper attention is given to scrubbing and to the saving of the ammonia gas liquor from all sources, the return would vary, say, from 16 or 17 cents upwards. I know of cases receiving as high as 20 or 30 cents simply by concentrating their liquor; and of course I know of cases also where the results have been less. But in looking up the question I find usually that in most of those cases it depends upon an improper scrubber, or other defects.

Mr. C. H. Nettleton—The occasion of my asking this question is this: I have had a concentrator at the works in my charge for six or seven years. I think it was the first one put up by Mr. Clapp, and in consequence it is probably crude in some respects. It does its work, but, like almost every other operation, there is more or less annoyance about it, and the dreams of large results which I had when it was put in have not been realized. We do make some money above expenses, but I question very much if we have received in the five or six years more than 10 cents per ton of coal carbonized. I may be wrong, but I have suspected that the profit that, as producers of ammonia, we ought to get, goes into the hands of the ammonia men. One of our members has made aqua ammonia, and reports very much better profits than can be made in concentrating the liquor, but advises his friends in small works not to do the same, on account of the care, trouble and annoyance. But although my dreams have not been realized as to profits from concentrated ammonia, I think if I had a concentrator to put in again, knowing the experience I have had, I should certainly put it in. We have made some money out of it, and hope that some time the price of ammonia will go higher, so that we may make more.

Mr. C. J. R. Humphreys—I would like to ask Mr. Osius if he will tell us what he thinks, or what he finds in practice is a fair return in ammonia per ton of coal carbonized, where the concentrating apparatus is used. I have used a concentrator for many years, and I presume that I am the member referred to by the last speaker as one who makes aqua ammonia. I have a decided impression that in making the concentrated liquor you lose a very large percentage of the ammonia when you try to concentrate up to a very high degree; and that in works of a fair size we get very much better results, as far as the money is concerned, by making the aqua ammonia. But I am free to say that there is considerable care involved in it, and that I would not advise small works to go into it. But the main point that I want to get at is, what is Mr. Osius' opinion as to the amount of ammonia which in practice is obtained from a ton of coal where the liquor is concentrated, say, up to 60 ounce?

Mr. Osius—I have found that in concentrating the liquor from the crude liquor, from 15 pounds upwards to 25 or 27 pounds of a 20 per cent. liquor has been obtained. There should be no loss in concentrating the liquor if the apparatus is properly erected and is tight, and if the storage tank is without leakage. The only possible loss from concentrating the crude liquor would be in losing the fixed ammonia in the discharge; but even that can be avoided by using lime, provided the works are large enough to warrant undertaking that manipulation.

Mr. W. H. Pearson—You said "20-ounce liquor?"

Mr. Osius—I mean 20 per cent. of 80 ounce liquor—NH_3, containing 20 per cent. of gas.

Mr. F. Egner—I would like to relate some of my experiences, which may be of value to some members of the Association in connection with this matter. Not more than two weeks ago I was called to start a little gas works, and was asked to have an interview with an ammonia contractor. The ammonia contractor came over and offered the company 6 cents per ton of coal carbonized for all the ammonia they could get. Another company not far from there had been getting 12 cents. I said to them, "Why not pay these people 12 cents per ton?" He explained to me how ammonia was being brought into that city from other cities, and that the price was going down everywhere (of course it was his business to talk in that way), and said that he could not possibly give more than 6 cents per ton of coal carbonized. I had felt that a least 12 cents per ton must be received, and I knew that he could make money at 25. So I said to him that I had made my calculations on 12 cents, and that he could not have it for less than 12 cents, and that if he did not pay that I would put in works there, and then we would get the profit, and he would not. The result of that was that we got the 12 cents. That was not more than two weeks ago. Some years ago a company of which I was then engineer put in a "Standard" washer scrubber. A contract was made with an ammonia company of that city for, I think, three years; and until it expired they paid us, I think, 25 cents per ton, for every ton of coal carbonized. When the contract was about to expire the contractor came to the president of the company. Our secretary, who had had charge of that thing, was then away, and at the East. The man proposed to the president that they would make a contract for five years, and pay the company 13 cents per ton of coal carbonized; saying that they could not pay any more than that because so many more had gone into the business of saving liquor and selling it. He made such a very good argument that the President, contrary to his usual practice—he was not a gas man—consulted with his engineer at that time; and I gave him what I knew about the facts, and advised him that he could make far more than that if he would manufacture into the sulphate right then and there. He finally allowed me to see what I could do. I saw the president of a large chemical works, and, to cut the story short, paved the way to make a contract for the liquor at 27 cents per ton of coal carbonized. We had been offered 13 cents, to the best of my recollection. We made the contract, before our Secretary returned, at 27 cents per ton of coal carbonized for the next five years. What it amounted to was just this: In the five years that the contract ran the Company was paid for its ammonia over $21,000. When our Secretary returned he was rather put out about that, because he found that he could have gotten 29 cents in New York. But we did the best we could, and we got nearly double what we had been offered. I therefore think that what Mr. Osius has stated is very well worth the consideration of the members of the Association. Those who have not studied up this matter ought to do so. It would no doubt benefit the companies if they would do so—those who make coal gas ammonia at any rate, for it would enable them to sell the gas cheaper and consequently to sell more of it, and therefore enable them to meet more successfully the competition with their opponent, the incandescent electric light.

Mr. Irvin Butterworth—We concentrate our liquor, at Columbus, and I will say for Mr. Nettleton's benefit that we net from our ammonia about 25 cents per ton of coal carbonized. I went over the matter very carefully, and I do not think that I have deceived myself in taking into account every item of cost. I do not think we make more than 20 pounds of 20 per cent. liquor per ton of coal. I would like to ask Mr. Osius his opinion as to the future market for the concentrated ammonia, and whether he thinks the price will increase.

Mr. Osius—As far as the future prospect of the ammonia market is concerned, of course it is very difficult for me to state, but I do not think that the price will increase, owing to the very sharp competition in the ammonia market, and the business pertaining to it. The aqua ammonia and the anhydrous ammonia (which of course are the second and third products of this ammoniacal liquor) have been made in very large quantities, and of late by very many works—much more so than was the case one or two years ago. The price for aqua ammonia (which, perhaps, would rule the price for the concentrated liquor) is as low as 4½ cents, and has been 6 cents and upwards. Of course in stating the price at 4½ cents I wish to be understood that it is for contracts and transactions of large proportions; but that figure is certainly more or less a guide for prices in general. There is another matter which may influence the market, and that is the experimenting with the coke ovens. As you all know there is a large quantity of by-products wasted at the present time, but I understand that experiments have been successfully carried on, and that it is probable that in a short time we will have to consider the by-products that come from that source, and which will amount to millions of pounds of liquor and to thousands of barrels of tar.

Mr. F. Egner—I would like to say, for the encouragement of members of this Association that I believe that the State of Ohio can use all the ammonia made in the United States for agricultural purposes. I have looked at that matter very extensively in the last few months. Of course our friends, the ammonia people, want to impress upon you the fact that you ought to sell the liquor for much lower prices than they are giving you now; but I want to take the other side and encourage them in paying higher prices. I have looked into this thing very carefully, and I can assure you that there is a good market for it, and I believe that the State of Ohio alone could take all the ammonia that is produced in the United States to-day, and make good use of it. So do not let them discourage you by giving you only a few cents for your liquor, not even for what the coke ovens can produce.

Mr. Osius—I believe I stated that I did not think that the price would increase; but I do not wish to be understood as saying that there will not be any market for the liquor at a reasonable and fair price. I think that there will be, judging from present appearances. Of course there are plenty of demands for ammonia, and the consumption is increasing from year to year.

The President—Does any other gentleman desire to ask Mr. Osius any questions, or to further discuss the paper?

Mr. W. H. Pearson—I move a vote of thanks to Mr. Osius for his excellent paper. (Carried.)

COMMITTEE ON PLACE OF NEXT MEETING.

The President appointed, as the committee for selecting the place for holding the next annual meeting of the Association, Mr. B. E. Chollar, St. Louis, Mo.; Mr. George G. Ramsdell, Philadelphia, Pa.; Mr. I. C. Baxter, Detroit, Mich.; Mr. J. F. Lynn, Memphis, Tenn.; and Mr. Robert Baxter, Halifax, N. S.

The President—Mr. Fred. Bredel will now favor the Association with his paper on "Mechanical Coke Handling."

Mr. Bredel read his paper as follows:

MECHANICAL COKE HANDLING.

Off and on for the last 15 years experiments have been made here and in Europe with mechanical handling of coke, but as far as I know nearly all of them have been failures, excepting the conveyer erected in Milwaukee, under the supervision of Mr. E. G. Cowdery, Engineer of the Milwaukee Gas Light Company. We have only to thank his energy and perseverance, notwithstanding the first failures and disappointments made, to have to-day a coke conveyer which is nearly perfect. To explain here all failures and improvements made, and to give a detailed history of the coke conveyer, would be too long. I will therefore only give a short sketch.

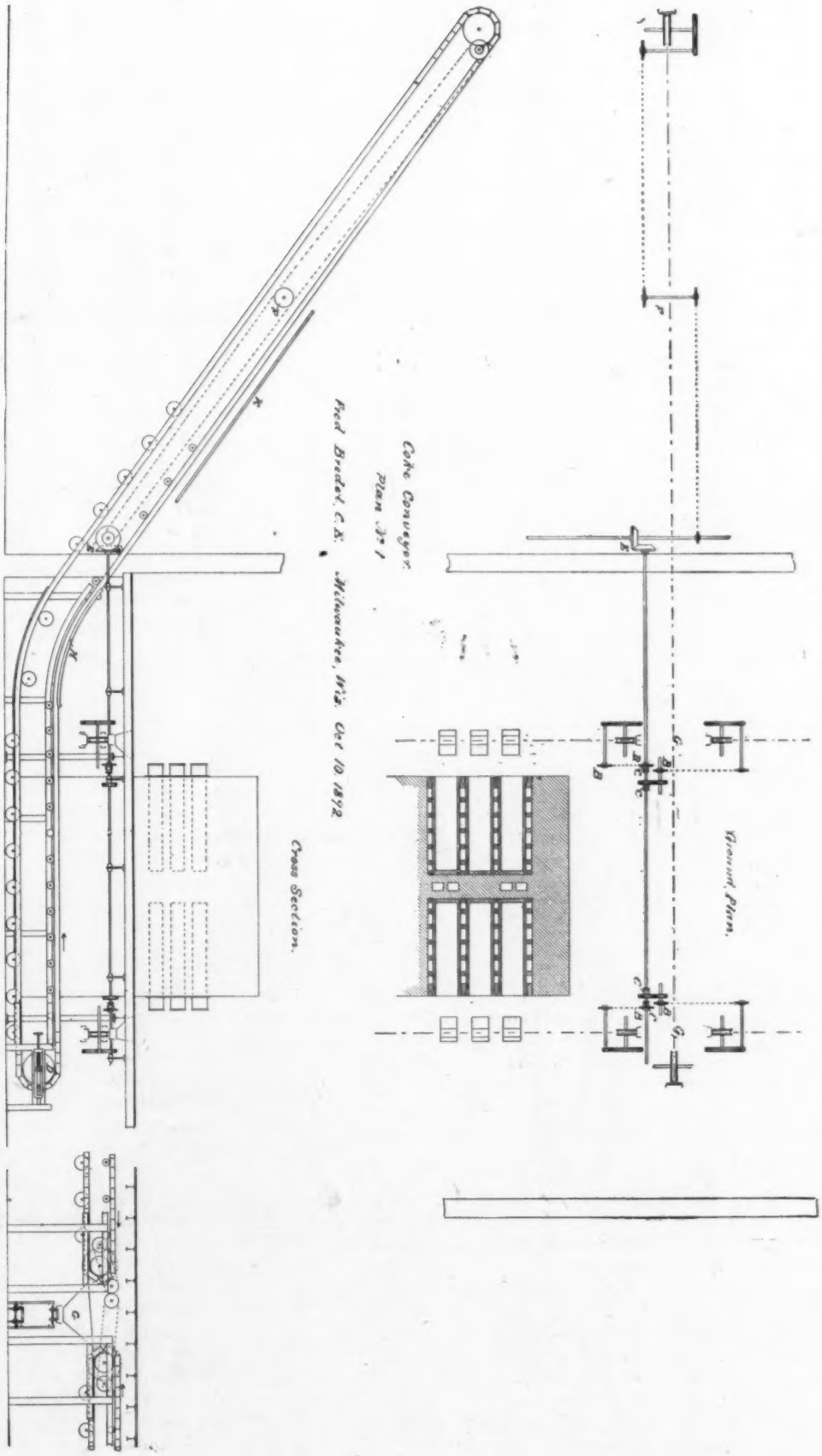
The annexed drawing No. 1 shows a ground plan and cross section of the way a coke conveyer ought to be erected. *A* is the main driving axis. From *BBBB* the four longitudinal conveyers are driven. At *CCCC* are clutch couplings to drive each conveyer independently. Each conveyer consists of an endless trough with take-ups on the end.

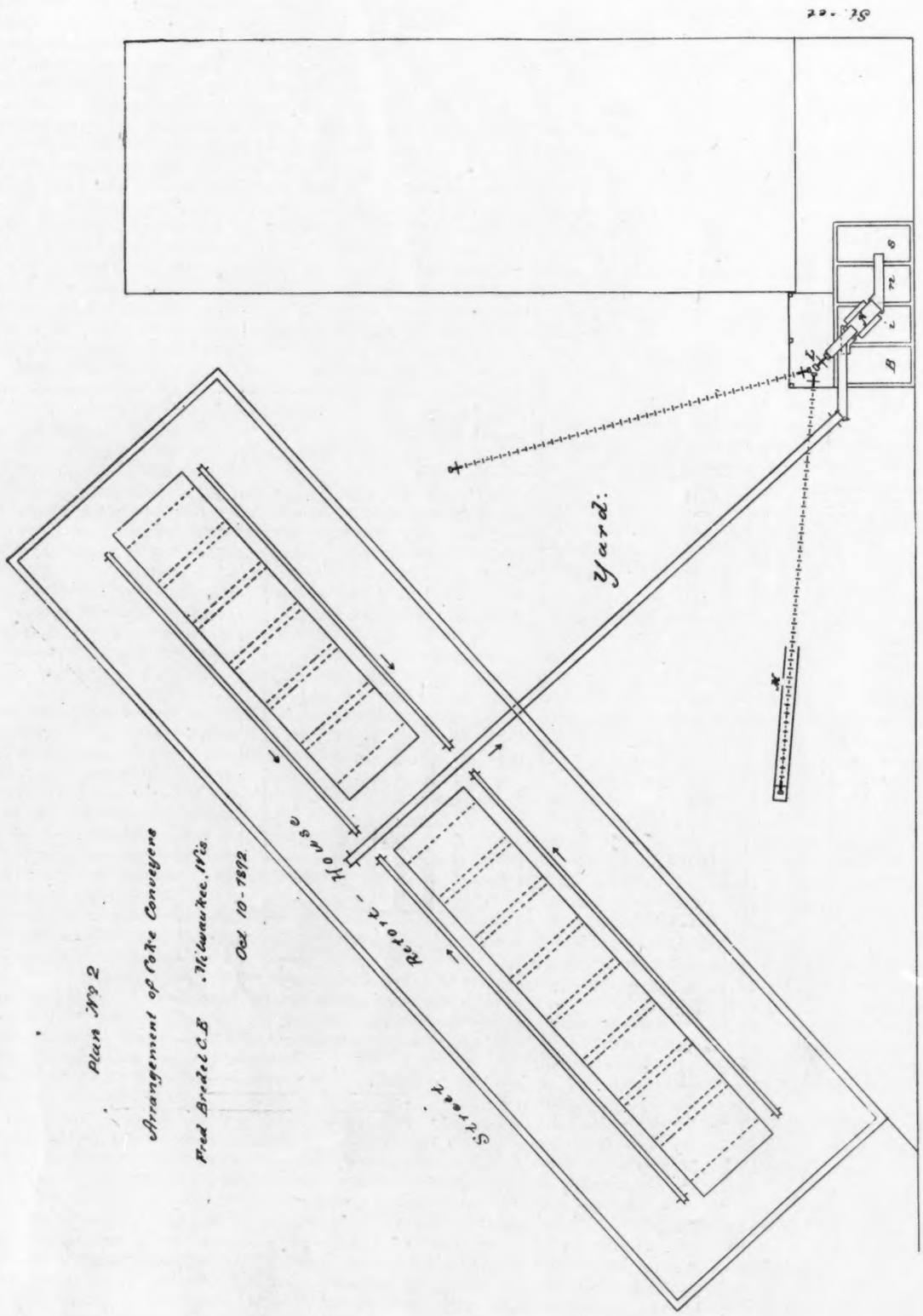
The first construction was so that each pan had an independent axis riveted to it at the bottom, with two small guide-wheels running on an angle iron rail. The wear and tear under this arrangement was enormous, and another great objection was the noise, which could not have been beaten by any good organized cat-music choir. A continuous stream of water was tried for a while as a lubricant, but did not work; so after some experiments the wheels were made stationary, and the trough, respectively, the different pans ran over the wheels, thereby the wear and tear was done away with, and each axis could be kept well oiled.

Some details in the driving arrangements were also changed, so as to prevent the breaking of the teeth; a plain friction wheel was substituted for the sprocket wheel, so that the only repairs are necessitated by the wear and tear of the pans.

On same plan is shown cross conveyer acting at the same time as an elevator. On one end you will find the take-up *D*. The conveyer receives its driving power by means of belting from *E* to *F*. The conveyer discharges at *F*, at a height of about 50 feet. The four longitudinal conveyers discharge in the cross conveyer at points *G* and *G1*. The cross conveyer has small angle irons riveted to each pan at right angles to the direction of conveyer, which prevents the coke from sliding backward when same goes on the incline. The conveyer has an angle-iron guide at *H* to keep the conveyer down in its place. At *K* water is sprinkled on the coke, which effectually quenches it. Under the conveyer runs a trough, so as to discharge the used-up water in a well or sewer.

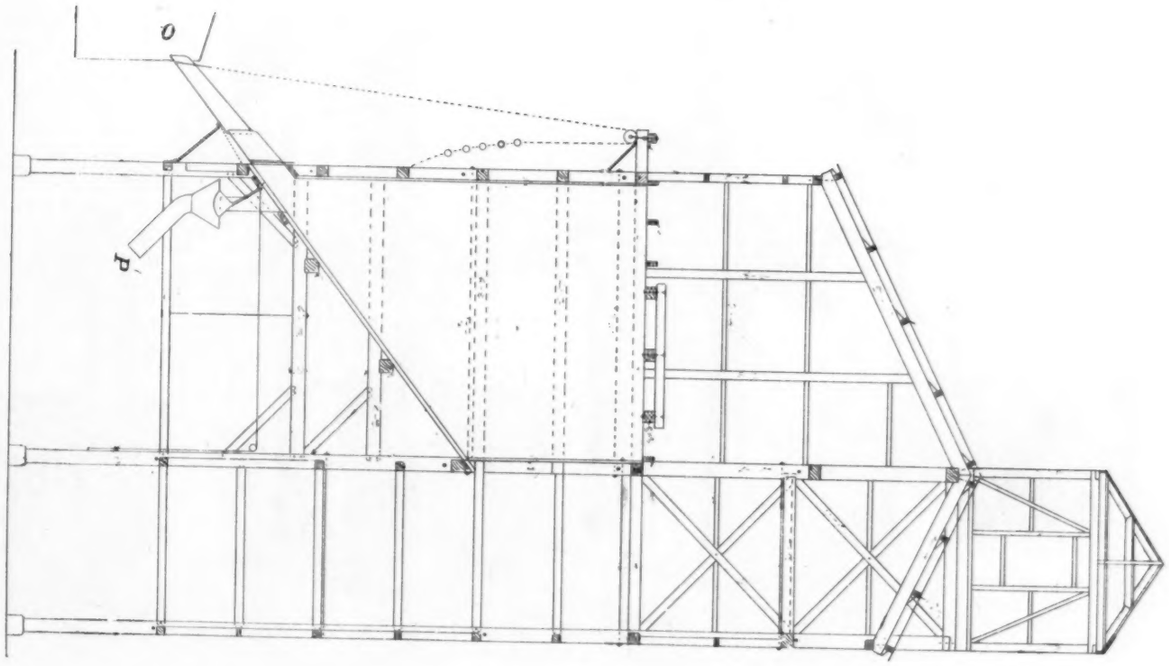
COKE CONVEYER. PLAN No 1.



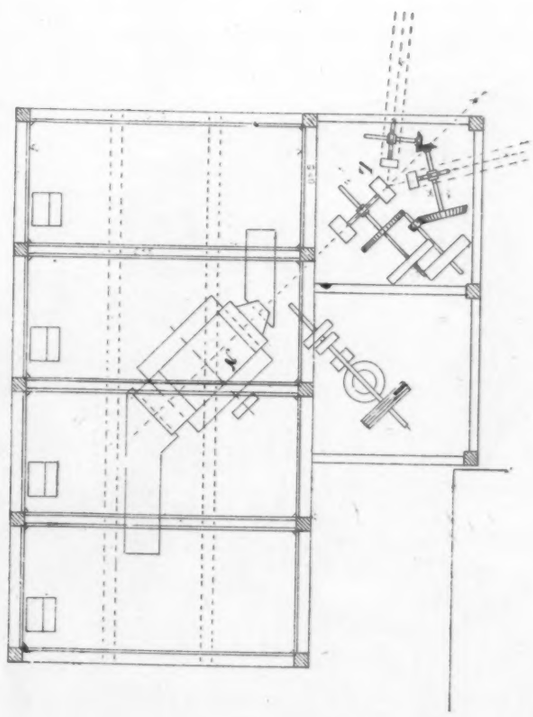


ARRANGEMENT OF COKE CONVEYERS. PLAN No. 2.

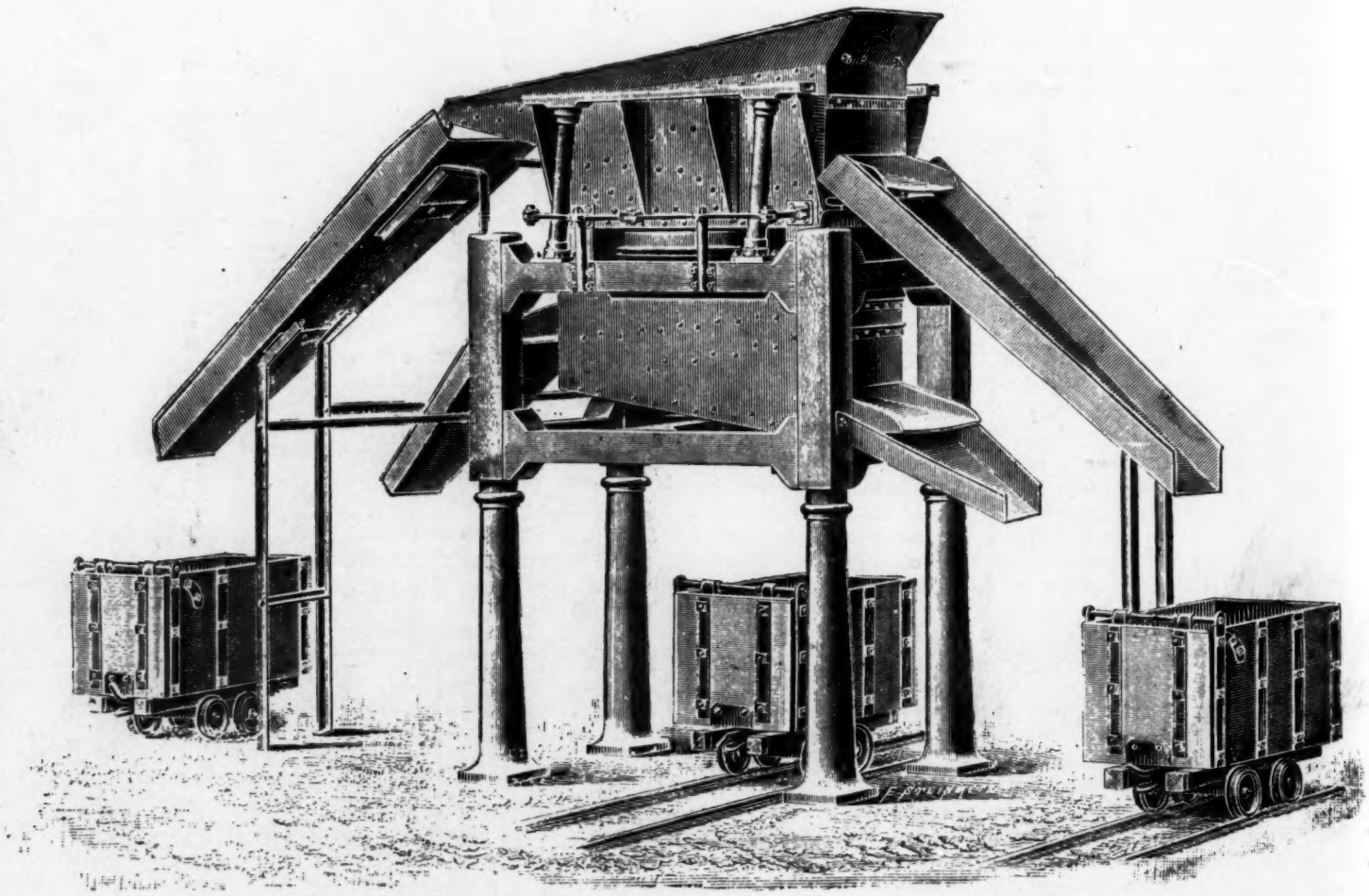
COKE CONVEYER. PLAN No. 3.



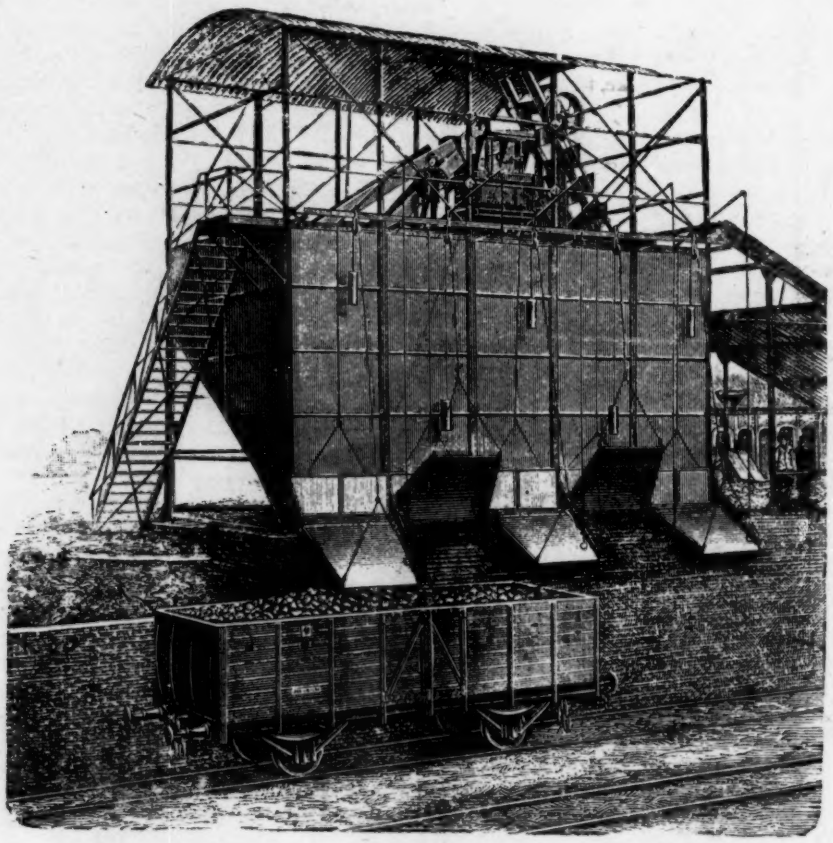
ELEVATION.



GROUND PLAN.



ROTARY SEPARATING SCREEN.—System Fred. Wm. Kloenne.



Coal or Coke Screening Tower and Bins, with Kloenne Rotary Separating Screen.

I will state here that this conveyer will shortly be changed into a conveyer which will dump the quenched coke at any height required, so that in case there is little coke in the yard, the coke will not be all broken up by a drop of 30 feet or more. Plan No. 2 shows the position of surface conveyers in the yard. The direction of these conveyers was necessitated on account of the triangular shape of the coke yard. Both conveyers discharge into a common elevator bucket *L*. Same is shown more clearly on Plan No. 3.

In regard to these surface conveyers, will say that the same are constructed on what is known as the flight conveyer principle. The same consists of a trough in which run scrapers consisting of square pieces of steel fastened to an endless chain, with the necessary take-ups on one end of each conveyer. Over this trough a rectangular box is built, having sliding doors on each side. If the coke shall be taken away from any point of the yard, say, for instance, at *M*, a man goes inside this box and opens the slide, the coke then drops into the conveyer. The conveyer discharges its load into the elevator bucket *L*. It is naturally understood that both conveyers can be run independently.

The elevator elevates the coke and discharges same by means of a chute into the separating screen *N*; from there the coke comes assorted in four different sizes, or in five or six, if required, into the bins. In the accompanying drawing I have shown the storage bins, consisting of four compartments for four different sizes of coke. The coke bins are so arranged that they can discharge at *O* into a railroad car standing on the platform scales, or at *P* into a wagon, also standing on scales. The operator simply pulls the slide and lets as much coke go in the wagon or railroad car, whichever it might be, until the required amount is loaded.

The whole loading and weighing of a ton of coke into a wagon requires scarcely two minutes, the greater time being taken up by the weighing of the empty wagon. An arrangement is also made by which the cross conveyer coming out of the retort house, can discharge its coke directly into the separating screen *N*. At the same time both surface conveyers can run. The screen has a capacity of assorting at the rate of at least 60 tons of coke per hour. We are now at the vital point of the coke handling business, "The Separating Screen." The general view of this separating screen I have given on sheet No. 4. The same is known as the "Kloenne Rotary Separating Screen."

I want to make a few remarks about the coke market. If we consider the high prices which are paid nowadays (thanks to the Reading combine) for anthracite coal, there is absolutely no excuse for any gas company claiming that they cannot sell their coke; but the coke market must be nursed into existence the same way as the use of gas for fuel. Where people are sure that they will at all times be able to get a supply of coke at reasonable prices, and in standard quality and regular size, no difficulty will be found to accustom people to burn coke, this being possibly the cleanest fuel to be handled.

But to sell coke as it comes out of the retort house, and so-called crushed coke, to everybody who comes along, indiscriminately for which use it is designated, no headway can be made in the sale of this bye-product. None of you would be willing to accept from a coal merchant coal in sizes large enough to be fired in a water gas generator if you want to burn same in your furnace or in a grate at home. What the coal merchants do, that is to say, to sell coal screened and of sizes as required, that we must also do. Two sizes, as done in some works, is not enough. My experience has taught me that it is best to sell coke as follows:

First size, coke larger than will go through a 2-inch ring. This size is very well adapted to metallurgical and steam plants, and for large house-heating furnaces.

Second size, coke larger than 1½ inch and smaller than 2 inches. This is best adapted for cooking stoves, small heating stoves and very large open grates.

Third size, coke between ½ an inch and 1½ inch. This is best adapted for very small stoves and for medium and small grates, and has the advantage not to burn away very fast, and keep a very pleasant, open grate fire.

The last size coke, the so-called breeze, can be used either at the gas works for raising steam, or might be sold where there are brick yards in the neighborhood for brick-burning purposes, for which coke of that size is in great demand.

To use a crusher to obtain these different kinds of coke is an unnecessary expense and very wasteful. Where the coke is all handled mechanically and with a suitable screening apparatus, all these sizes can be obtained, and you will find in practice that you will always make that way exactly the amount required of each different kind.

Before it is possible to decide the kind of separating screens to be used it is necessary to know what requirements are made of these screens, and we find that the following conditions must be adhered to:

First—The apparatus must be able to handle a large amount of coke; in fact, at the rate of 500 tons a day.

Second—There must be no strain in foundations, etc., so that it will be possible to put the screening machinery at any desired height.

Third—All power must be used for screening and not for friction.

Fourth—All wearing parts must be easily accessible and interchangeable.

Fifth—The screens must be easily interchangeable.

There are to-day the following kinds of separating screens:

I. Hand sieves with backward, forward and rotary action.
II. Inclined screens on which the material is thrown by a shovel.
III. Horizontal screens with swinging motion.
IV. Rebounding screens.
V. Rotary drums.
VI. Shaking screens.
VII. Pendulum screens.
VIII. Revolving separating screens.

Not taking the hand screens into consideration, we have only the following four screening devices between which to choose:

I. Rotary drums.
II. Shaking screens.
III. Pendulum screens, and
IV. Rotary screens.

The worst of all are the yet very much used rotary drums. The working surface of this machine is very small, and the material to be screened has at all times to be lifted part way on an incline on the inside of the drum, and the dead load of the machine itself is very large. It follows thereby that, in comparison to the force expended, the actual work done is indeed very little. The repair on such a machine is very large, and on account of the shaking it cannot very well be put on the top of a tall tower. Another great disadvantage is that the largest material is carried the longest distance, and thereby unnecessarily broken up, resulting not only in the waste of material, but also in the unevenness of size, as a large amount of smaller coke will go along with the big coke. And the large coke, therefore, consists of a mixture of different sizes about in the same proportion as it comes from the retort house. Result—small coke, breeze and unassorted coke.

The shaking sieves do not all possess this disadvantage. They utilize the screening surface energetically, but only intermittently. The first kind of these screens was constructed by Messrs. Sauer & Meyer. It did the work all right as far as screening was concerned, but the forward and backward speed of the screen must be great enough to pull the screen properly away from under the material to be screened. You will thereby see that only one half of the force is used for screening properly, and the other half for the backward motion; also, the initial force stored in the screen during each motion, is destroyed at the end of every motion, thereby resulting in heavy shaking strains on the foundation, which makes it impossible to put such a machine at any great height, not to speak at all about the large amount of power required. Lately improvements have been made to try to overcome this strain by means of springs and other devices, but this has never entirely been a success.

The pendulum screen was invented by Engineer Karlik. He suspends his screen by means of a ball joint. The screen has suitable guides for backward and forward motion, and the motion is imparted by means of a crank wheel; but you will see, on account of the way of fastening, no two screens in the same machine can work alike. At the highest point the screen makes an elliptical movement with a long axis in the direction of the incline of the screen, while in the center the movement is a circle. And near to the discharging point the movement is again elliptical, with a long axis with right angles to the incline. It follows thereby that only at one point, either at the highest point, in the center, or at the lowest point of the screen, the force employed is in proportion to the work done, while at all other points it must be in excess.

Another disadvantage is the way the screen is fastened. This necessitates that the motion imparted to the upper screen shall be sufficient to screen the material and throw out the large pieces. It thereby follows that all the lower screens make much larger movements than would be necessary. This requires an enormously strong foundation, large suspension bolts, and also unnecessarily large repairs, and therefore the screen is unsuitable for such work as is required from coke screens.

We come now to the last, to the rotating screen as designed by Mr. Frederick Wm. Kloenne. The screen box, as you will see, is supported by four columns, which have the ends rounded off to spherical surfaces. The motion is imparted by means of an eccentric, which is suitably

counterbalanced. To prevent the screen box from revolving around its own axis, different devices have been adopted, among others the one shown on the illustration. The driving point lies in the center of gravity of the screen box when full of material, which makes a very solid construction, reducing the vibration to a minimum. The movement is absolutely rotary, and the same at any point, and of any screen, thereby making it possible to counterbalance the screen absolutely, so that there will be no strain on the foundations whatever, and all the force is used for screening, and none for unnecessary strains. The bearings are all adjustable and made of a composition not attacked by coke dust. Changing of the screens and putting different ones in, or new ones, as the case might be, can be done in an hour.

How little force is used to move the screen the following record of performance will show:

The length of the screen was 6 feet, the width 3 feet. The box contained four screens. In one hour was screened 110 gross tons coal in the following sizes:

From 2 inches and above	40 per cent.
From 1½ inches to 2 inches	20 per cent.
From ⅝ inch to 1½ inches	20 per cent.
From ¼ inch to ⅝ inch	12 per cent.
Below ¼ inch	8 per cent.

The size was absolutely even and exactly in proportion to the holes in the screen. The revolutions were 170 per minute. The power used while screening was 6¾ indicated horse power, and it required only 1$\frac{1}{10}$ horse power to move the apparatus at the same speed empty.

Discussion.

The President—You have heard a very interesting paper upon the mechanical handling of coke; are there any questions that any member would like to propound to Mr. Bredel?

Mr. G. G. Ramsdell—I notice on the last page of the paper a statement that "in one hour was screened 110 gross tons of coal." I would like to ask whether that refers to coal or to coke.

Mr. Bredel—It refers to coal. Of coke it would screen the same amount in volume, but not in weight. The record was taken from a coal assorter.

Mr. Irvin Butterworth—Is the machine which you have described here in use anywhere in this country?

Mr. Bredel—There will be one in use in about four weeks. We have constructed one in Chicago, and it will be on exhibition there.

Mr. Irvin Butterworth—At the World's Fair?

Mr. Bredel—Possibly; but I am not quite certain about it.

Mr. McKeige—I would like to ask Mr. Bredel if he recommends this conveyer as a matter of convenience, or of economy. I have looked into the matter pretty thoroughly myself, and I would like to know if he looks upon it as a matter of convenience, or of economy in the use of this conveyer.

Mr. Bredel—I consider it a matter of economy. Where coke is handled by hand it is very difficult to screen it. You have to assort your coke, and to do it all by hand is very expensive, as you know, and involves an expense of as much as a 1¼ or 1½ cents per ton of crushed coke. Here you get your crushed coke practically for nothing.

Mr. McKeige—I inquire particularly not as to the conveyer but as to the screen.

Mr. Bredel—You have to have a conveyer if you have a screen.

Mr. A. E. Boardman—It seems to me that in the ultimate economy of conducting our larger plants, the handling of coke and other products of the work is important to be taken into consideration—as important in fact as is the handling of the coal. It seems to me that this paper is the pioneer in a direction in which it would be well for the managers of larger works to give consideration and attention, not only to the handling of the coke by mechanical means, but also of our lime used in purification, and of our ammoniacal liquor and of our tar, and to place ourselves in a position where much of our work will be done by machinery, which is now done by manual labor, and so be able to free ourselves from the power of organized labor in strikes.

Mr. F. H. Shelton—Mr. Bredel has confined his paper to a subject which has not much been looked into—that of conveying coke. I would like to ask his judgment, as one who is probably more conversant with the subject than the rest of us, as to how large a works would have to be before it could economically use a coke conveyer.

Mr. Bredel—I think a maximum output of from 400,000 to 500,000 feet would not pay. I will say an output of 700,000 feet.

Mr. F. H. Shelton—That is, you would say that the conveyer cannot be used to advantage unless the works have reached an output of three quarters of a million feet per day?

Mr. Bredel—I ought to express myself a little differently. A coke conveyer, to properly handle coke from the time it drops out of the mouth piece until it is sold, will not pay for anything less than 750,000 feet of gas per day; but a screening device, with an elevator, might be put up for almost any gas works, say for 200,000, or even 100,000 feet, calculating upon five feet per pound.

Mr. Irvin Butterworth—We have used a conveyer and elevator in the worst form described by Mr. Bredel on page 6 of his paper; and even that worst form of conveyer is regarded by us as very useful.

Mr. Bredel—You mean the rotary screen?

Mr. Irvin Butterworth—Yes. It has to be all lifted up, and then comes down again. If it does not screen it all it will still give you a certain amount of screen coke, but the balance of it is not screen. We find that even that is economy.

Mr. Bredel—You would not have to use any breaker, but your screen has to be large enough to handle the whole product.

Mr. W. H. Pearson—Can Mr. Bredel give us any idea of the cost per bushel for screening, in works of 750,000 feet per day?

Mr. Bredel—It is very hard to give a statement of what it will cost, but I can tell you what the labor will amount to. You will want one man in the day and one man at night to superintend the proper running of your conveyer. Now, in very small works it might be possible that your night foreman would see to it during the night that the screen ran when you draw your retorts. During the daytime your man in his free time could be engaged in doing any repairs which might be necessary to the conveyer. If the conveyer has to handle above 1,500,000, I think it is necessary then to have two separate men, one at night and one at day; and then you will have to have a man to sell your coke. You will have to have that anyhow. So that every one can figure out in that way how much it will cost. It would be different in every case, according to the wages paid.

Mr. W. H. Pearson—And there is the cost of the power, besides. Can you give us that?

Mr. Bredel—It might run possibly for 6 hours in the 24, and would require a 25-horse power engine.

Mr. W. H. Pearson—For 750,000 feet?

Mr. Bredel—No; I am figuring on 1,750,000. It might be a little less—possibly a 25 horse power engine would answer in your case; but the power is very small in proportion. I would like to say to Mr. McKeige that I made a statement to him that a screen could not be used without a conveyer. That was a slip. I meant to say that it could not be used without an elevator. A screen cannot well be used without an elevator, but it can be used without any conveyer.

Mr. McKeige—I have had an estimate for one of these conveyers which we have talked about to day, and which cost $16,000. We figured up the saving, and we found that we could save only about $654 per year by the use of that conveyer. We found that there was very little saving in the labor, that we had to use just so many stokers and just so many firemen, and that we could not do without them.

Mr. Bredel—I think that the cost of your conveyer was a little high.

Mr. McKeige—We wanted the best conveyer that could be got, and that was the best that it could do.

Mr. Bredel—It depends altogether upon how much you can save. For water gas it might not pay to put up conveyers under certain conditions, but under other conditions I am sure that it will pay.

Mr. A. E. Boardman—If there are no other questions to be asked Mr. Bredel, I move the thanks of the Association to him for his kindness in preparing the paper, which is quite an important one in my estimation. (Carried.)

Adjourned to Thursday, October 20th, 1892, at 10 A.M.

The Estimation of Sulphur in Burnt Pyrites.

Dr. G. Lunge, in a recent reference to this subject, affirms that he has carefully examined Watson's method (heating with sodium bicarbonate and titration of the alkali not converted into sodium sulphate), and, in conjunction with Schmidt, has succeeded in removing the sources of error which hitherto attended the method, so that the following modified process gives accurate results and is thoroughly to be relied upon.

About 3.2 grms. of the substance are intimately mixed with 2.0 grms. bichromate of known strength in a nickel crucible capable of holding 20 grms., and heated first for 10 to 15 minutes with the top of the flame just touching the bottom of the crucible, so that the bicarbonate alone is decomposed, and then for 15 minutes with a stronger flame until the whole mass is red hot. Fusion, which does not easily take place when a nickel crucible is used, must on no account be allowed to occur. In

order to avoid mechanical loss, the crucible must remain covered throughout the whole operation; stirring is not necessary. The mass, which is emptied into a porcelain basin after cooling, is black and porous if the operation has been properly conducted; if too little heat has been employed it forms a black, almost insoluble cake, as hard as glass. It is then extracted by boiling with water, and, if necessary to obtain a clean filtrate, a concentrated solution of salt carefully neutralized with hydrochloric acid and methyl orange added, after which it is filtered through a filter paper moistened with salt solution, the precipitate being stirred up so as to close the pores of the paper at once; if, notwithstanding this, the filtrate comes through greenish-yellow, it must be passed through the paper again. The boiling with water is repeated several times, the residue washed with dilute salt solution and the united filtrates titrated with N 5 hydrochloric acid, the faintest possible coloration of the indicator being used.

The determination of sulphur in burnt pyrites by means of nitric acid is stated by the author not to give such accurate results as has hitherto been supposed.

ITEMS OF INTEREST FROM VARIOUS LOCALITIES.

MR. JOHN R. MCLEAN has been elected President of the Washington (D. C.) Gas Light Company, and Mr. John McIlhenny has been appointed Consulting Engineer. It is more than likely that Mr. T. G. Lansden, who is now General Superintendent of the Company's works, will eventually be designated as the Company's Engineer. Mr. McLean, who is a well known newspaper editor and proprietor, is a man of great tact and executive ability. We have it on authority that cannot be controverted, that Mr. John McIlhenny refused to accept the Presidency.

WE are indebted to a Pittsburgh (Pa.) correspondent for the following: "Some days ago one Jacob Mosberger, who resides on Bluff street, was convicted before Judge Porter, in the Criminal Court, of stealing gas from the old Pittsburgh Gas Company. In the latter part of July, when the meter indexers came to get the statement of the meter to be rendered in the August bill, they caught Mosberger by surprise. He happened to be at home, but refused to permit the men to see the meter at that time, alleging that the approaches to it were in a dangerous condition, because of some repairs that were underway. Very sensibly, the men did not persist in their attempt to read the meter, but quietly reported the circumstance to Secretary McClelland. He made out a plan that answered admirably in securing unsuspected entrance for the meter takers, whose investigations proved that Mosberger, by means of a section of Revere Company giant air brake hose, assisted by a Westinghouse air brake clamp, had got around the meter. The inspectors immediately removed the apparatus, and succeeded in getting to the sidewalk before they were confronted by Mosberger, who threatened them with a hatchet, loudly shouting that they were stealing his property. An officer speedily placed Mosberger under arrest, and his conviction ensued." Our correspondent failed to add the sentence imposed on the culprit.

THE National Gas and Water Company, of Chicago, Ills., having about completed the construction of the plant intended to supply the Cicero district—a suburb of Chicago—with gas, has turned its attention to the obtaining of a franchise for the West Side of Chicago. In any event, Messrs. Charles D. Hauk, August Lueders and Le Grand W. Perce have applied to the Council of Chicago for a franchise for the operation of the Chicago West Division Gas Company, which is capitalized in the sum of $2,000,000. Having agreed to bind themselves to construct a works capable of producing ten millions cubic feet per diem—the maximum period for the construction to be three years—they also agree to forfeit $100,000, if at the end of three years the works are not completed, they to execute a bond in that sum on the issuance of the franchise. Among other things it is stipulated that the price of gas for illuminating purposes shall not exceed $1 per 1,000, and that gas for fuel shall be sold at 75 cents per 1,000. The ordinance was brought before the Council by Ald. Rohde, and at our last advices the matter was in the custody of the committee on gas, oil and electric lights. The gas rates now ruling in the West Side are $1.25 for light and $1 for fuel.

MESSRS. BRADLEY & BLISS, dealers in the gas stove line, at 552 State street, New Haven, Conn., have made an assignment.

WE are informed that the old Randolph Coal and Gas Company, which had been reorganized and incorporated as the North Kansas City Coal Company, will begin operating the coal mine at Randolph at once. The mine has been idle for two years, owing to differences among the stockholders as to the management of it. The plant is a well-equipped one and the coal can be mined easily and in paying quantities. Men have been at work cleaning out the passageways, and 100 miners will be put to work as fast as they can be obtained, and the number be increased as room for them can be made.

WE are indebted to "Observer" for the following account of a special meeting of the Concord (N. H.) Gas Light Company, held on October 27th: The President (Hon. John Kimball) was in the chair, and at his request Clerk Dana read the call for the meeting. On motion of Colonel Josiah B. Sanborn it was voted that the Directors be given power to apply to the Legislature for authority to increase the capital stock to an amount not in excess of $300,000. On motion of L. D. Stevens it was voted that the Directors be authorized to construct an electric station at Garvin's Falls and to build a connecting line thereto. On motion of the Hon. John M. Mitchell it was voted that the Directors be authorized to employ another corporation to conduct any portion of its business, or to lease any portion of the plant of the Company. The Hon. Samuel C. Eastman, Attorney of the Company, read the form of an agreement with the United Gas Improvement Company, of Philadelphia, which the Directors had caused to be prepared, and the execution of which they recommended. This agreement was unanimously approved and ratified by a stock vote, and the Directors were instructed to proceed with its execution. At a subsequent meeting of the Directors the agreement was executed. It provides that the United Gas Improvement Company will "devote its large means and extended experience to the improvement of the Concord Gas Light Company's plant and the betterment of the service." Under this contract the U. G. I. Company agrees within one year to increase the candle power from 16 to not less than 20, or perhaps 22-candle power. That Company will, in carrying out its contract, have to expend $50,000 at once in plant improvement; and it is also authorized to form a local Company, under the laws of New Hampshire, to conduct the business of the Concord Light and Power Company.

MR. CHARLES R. PRICE, Treasurer of the New Bedford (Mass.) Gas and Edison Light Company, writing to us under date of October 28, says: "I enclose herewith a copy of our 'ad.' and local notice of our baking contest at the Farmers' Fair in this city. We feel quite well satisfied with the result, although the time of advertising and preparation was a little short and hurried. It may serve, however, though a little 'after the fair,' for a short item."

THE inclosures referred to by our correspondent are appended. The first (which was the advertisement announcing the purpose of the Company) is: "The Gas Company, desiring to test the practical efficiency of its gas stoves, takes the occasion of the Farmers' Fair to make the following offer: A beautiful gold watch will be given to the successful lady competitor who will send for competition on Thursday, the 22d inst.,* a loaf of pound, citron or currant cake, unfrosted; the cake to be baked on that day in a gas stove. Also a $5 gold piece for the best loaf of bread baked under the same conditions. On Friday night (Sept. 25th) the prizes will be awarded, and the cake and bread will be sold at auction, the proceeds to be divided between the Fair and the St. Luke's Hospital. Tickets further explaining the plan and to accompany the loaves will be distributed at the Gas Company's office or sent to any address on receipt of postal card. The committee will be at the Rink Thursday afternoon and evening to receive loaves and give proper numbers. The watch is a 14-carat, solid gold Waltham watch, hunting case. It is on exhibition in the window of H. B. Howland's jewelry store, on Purchase street."

THE other inclosure (which refers to the result of the contest and the awards) is as follows: "The judges of the baking contest for the prizes offered by the New Bedford Gas and Edison Light Company have awarded the gold watch to Mrs. John A. Bates and honorable mention to Mrs. Clement C. Read and Mrs. C. W. Briggs. Each of the successful competitors offered a citron cake in the contest and each used a Goodwin gas stove. Mrs. Bates used a No. 8 stove—she has used it in her household for the past 10 years—and the time of baking was 70 minutes. Mrs. Read used a No. 7 stove, and has used it for 8 years—the time of baking was 35 minutes. Mrs. J. F. Weeks, for the best loaf of bread, was awarded a $5 gold piece. The time of baking was 45 minutes. Samples presented by Mrs. Clement C. Read and Mrs. F. H. Ellis were highly commended, and the time of baking was, respectively, 41 and 45 minutes. The judges were Messrs. H. H. Fisher, Anton Zoggle, A. G. Alley, Jr., A. J. Rice and Mrs. Franklyn Howland."

* September.

WE are in receipt of a set of handsome photographs, showing the general appearance of the new retort houses of the Galveston (Texas) Gas Company, as designed by the Superintendent, Mr. Jno. Gimper. One side of the retort house proper is composed of arches reaching to the roof, thus insuring as plentiful a supply as possible of light and air—the latter an esseutial requisite in a climate like that of Galveston. There is not a single door in the building; even the basement floor was sufficiently well lighted to permit the taking of an accurate photographic picture of the equipment. Mr. Gimper now begins to see light ahead of him at Galveston.

THE Manchester (England) Literary Club held a meeting about mid-October, and the "star piece" of the evening was contributed and read by Mr. Thomas Newbigging, whose excellent "Handbook for Gas Engineers and Managers" has made him noteworthy the gas world over. Mr. Newbigging's paper before the Club was entitled "A Philistine on the Egotism of Literary Men," and it was at once clear cut and irresistibly humorous, and those who would like to "take it all in" will find a very complete report of it in the Manchester *City News*, dated Oct. 15.

AN oil fire, traceable to the ignition of refuse escaping from the Philadelphia and Atlantic refineries, at Point Breeze, Phila., caused a loss of perhaps $75,000. The city gas works at the Point was among the sufferers.

ACCORDING to local advices, a special committee of the Springfield (Mass.) Gas Light Company—Messrs. E. Gunn, Samuel W. Porter and James Kirkham, of the Board of Directors, with General Manager Fowlew as an advisory member—after an extended investigation has determined to install an auxiliary water gas plant. All the plans have been prepared. According to these, in a rough estimate, the total expenditure will amount to $60,000; and one feature of the extensions will be the erection of a commodious new purifying house, to be located at the corner of State and Walker streets, on ground covered by two small houses, the title to which is now in the Company. Other changes will be made in the general arrangement of the buildings. It is thought that the whole addition will not be completed before next spring.

A NEW generator of the T. H. type has been placed in the electric annex of the Rome (N. Y.) Gas and Electric Light Company. It will be used for keeping up a supply of current for small motor powers.

IT is also rumored that certain capitalists are endeavoring to secure control of the above named Company.

SOME time ago the Wheeling (W. Va.) *Intelligencer* printed certain matter far from complimentary to the management of the financial department of the City Gas Works, during the term of a former Secretary of the Board of Gas Trustees, Mr. A. A. Franzheim, and the latter, in a sincere desire for the fullest investigation, forwarded the following to the Second Branch of the City Council: "To his Honor the Mayor and Members of the Council of the City of Wheeling: Gentlemen—Owing to certain libellous charges published in the editorial columns of the Wheeling *Intelligencer*, reflecting on my honesty during the term of my services as Secretary of the Board of Gas Trustees of this city, I feel it incumbent upon me to call the matter to the attention of your honorable board, and ask an immediate investigation of the affairs of that office during my administration of the same, for the purpose of vindicating my honor and self-respect as a citizen of this city.—A. A. FRANZHEIM." On motion of Mr. Bailey the communication was referred to the Board of Gas Trustees and the Committee on Lights of the City Council. Following this disposition of Mr. Franzheim's petition, Captain Price handed in the appended preamble and resolutions:

Whereas, It has become known that the Trustees of the gas works, shortly after the resignation of the late Secretary of the gas works, A. A. Franzheim, discovered that there were such irregularities in the accounts kept by said Secretary as to leave him in debt to the city in large amounts, and that upon the discovery of said delinquencies and the disclosure of them to him he paid over on account of said delinquencies, or in full thereof, sums amounting to $6,412.24; and

Whereas, It is not many years since, under other honest but confiding Trustees, another Secretary and another Treasurer of the gas works were defaulters in an amount exceeding $12,000, but the total of which can never be ascertained, owing to the burning of the books of accounts of the gas works, and it is deemed advisable to have such an auditing of the accounts of said Secretary as will disclose whether any or other irregularities have occurred, and such an investigation into the methods of the keeping of accounts of the gas works as may be best adapted to protect against defalcations and shortages in the future;

Resolved, That a Special Committee of five members of Council, two members from the first branch, and three from the second, at least one member from each branch to be of a different political party from the other member or members from that branch be appointed forthwith, to determine whether any other irregularities or shortages have occurred in the accounts of the said A. A. Franzheim, Secretary, or of the funds of the Board of Gas Trustees, and to ascertain whether it is still the practice to permit the shipments of tar or other products of the gas works to be made without their value being charged on the books of the Secretary in the office of said Gas Trustees, or whether, under the system of accounts still pursued in the gas office, it is possible for the Secretary or any other officer of the gas works to carry on his books as cash large amounts of money represented only by personal slips in his own custody, and of which he only has knowledge; and whether the system of accounts is such that there can still be large payments by purchasers of products from the gas works on account thereof to the Secretary or any other officer, and the same can be devoted to his own uses without detection, otherwise than by proof of the payment coming from the purchaser.

Resolved, That the said Special Committee be instructed to begin its investigations immediately, and to pursue the same with diligence and to report promptly to the Council the facts in regard to the said shortages, the same never having yet been reported to the Council, and any other facts which they may learn in reference to any shortages or defalcations in the accounts of the gas works, and to accompany their reports with such recommendations as to the methods to be employed in the future in keeping the accounts of the gas works, and providing checks against misapplication of funds as their investigations may show to be necessary.

Resolved, That the said Committee shall have power to send for persons and papers, and to employ an expert accountant, if in their judgment it shall be necessary. This document aroused much discussion, and motion and countermotion followed in quick succession. It was finally decided to table the whole matter, by a decisive vote.

THIS proceeding against the ex-Secretary has a decidedly bad odor and a pronouncedly ragged look. In support of this belief we have only to report the cold facts as known to us. Mr. Franzheim is a candidate on the Democratic ticket for the local office of sheriff, and the preamble and resolutions were offered by a Republican. As these resolutions were presented at a time prior to the election, which would not admit of their nullification or confirmation in the ordinary course of an investigation before the election had taken place, it must be conceded that the "charges" are in the nature of a campaign document. The theorists who favor municipal control of gas supply (including Prof. Bemis) will please take note of this Wheeling instance, as going to show that such enterprises are not altogether outside of politics—and "dirty politics" at that.

THE Cook County Fuel Gas Company, of Chicago, has been incorporated by Messrs. R. M. Shaw, B. W. Schumacher and Thomas R. Shearer. It is capitalized in $2,000,000.

A RECENT auction sale of 5 shares of stock in the Media (Pa.) Gas Company is reported, and fairly good prices were obtained. The average was 82.80 per cent. on the par of 100. The actual par value of the Media shares is $25.

WE understand that the Gloucester (Mass.) Gas Light Company will manufacture its own lime hereafter, having prepared an excellently built kiln for the purpose on its premises at the foot of Duncan street.

THE proprietors of the Haverford (Pa.) Electric Light Company have again been burned out—the second time in four years. The last fire occurred on the morning of November 1st, and the loss amounted to $20,000.

AT the last annual meeting of the American Association one of the papers that seemed to us to have a good bit of meat in it was that prepared by Col. Clement A. White, of this city, who elaborated on the question, "Do Small Gas Companies Need Consulting Gas Engineers?" Our position on this question has been asserted many times, and it has always been held by us that they do need them, in the great majority of instances, at any rate; for in some of the "majority samples" the men who own the plants are so satisfied that they know all about the works and the street end thereof, that they fail to see the necessity for the services of other than a $60 per month engineer-stoker meter-taker-and-so-on man. To point the moral we give the following respecting what the owners of a Company in this country (the letter detailing the duties that would fall upon the lucky aspirant for the position was written on Octo-

ber 26th last) expected from one who, knowing that they were in the market for a "manager," made application for the plant: "Dear Sir—Yours of the —d to hand. I am looking for a man who is willing to step in and take entire charge of our gas plant at the works. He must make the gas, take care of the engine, boilers, generators, condensers, scrubbers, etc., and keep everything about the works in good shape. We put out from 18,000 to 20,000 cubic feet per day. I allow a helper three days every two weeks to help clean up and do such work. If you can fill the position in a satisfactory manner it will be permanent. The wages will be $60 per month; the hours are from 9 A.M. to 9 P.M. The unloading of coke I hire extra. Should you be satisfied with these terms please let me know at once." Now, does it not seem that these works, in due course of time, would be in fair condition for the services of a consulting engineer?

MR. SAMUEL PLATZMAN, according to the New York papers, has brought suit in the Court of Common Pleas to recover $20,000 from the Brush Electric Illuminating Company for injuries sustained by coming in contact with a "live wire" on July 20th last, the accident happening at the corner of Bowery and Fourth street. Difficulty in fixing the ownership of the wire was experienced, and the Brush Company having, as alleged, ignored two orders of the court to give information, Judge Giegerich, on an argument to declare the Company in contempt, gave the Company five days to submit to the court's order, or be punished for contempt. The Company purged itself before the time limit expired.

THE Newark (N. J.) newspapers are asserting that a consolidation of the Newark Gas Light Company, the Citizens Gas Company, of Newark, and the Newark Electric Light and Power Company is not only a possible thing, but that it is also a probable one. This is simply bosh—for the near future at any rate. In the course of time consolidation of the gas interests there may occur—the policy of the thing alone will determine that—but when the Newark Electric Light and Power Company is admitted to the compact a long period will have passed.

THE last Saturday in October was a doleful one in Milwaukee—for that matter the whole country was a sharer in its sorrow—for fire had devastated a large portion of that beautiful city. While the gas men at large participated in the general distress over Milwaukee's sad visitation, naturally the larger part of their sympathy was with the Milwaukee Gas Company, the manufacturing department of which, according to the earliest despatches, was said to have been completely destroyed. However, with the clearing away of the smoke came the cheering intelligence that the Gas Company had not been blotted out. On the contrary, the Company escaped any great damage. The water gas station on Milwaukee street, as to its generating and purifying departments, and some portions of the old plant at Jefferson and Menominee streets, were more or less injured, but the holders, owing to the celerity and coolness of Mr. Cowdery and his aides, were saved. The coal gas station on Erie street was intact, and gas was sent out on Saturday evening, October 29th, in fairly good volume. We understand that repairs on the water gas division are already underway. We hope in time, or when Mr. Cowdery has somewhat repaired the damage to the plant, to give an accurate report of the affair; and in the meantime we offer our hearty congratulations that the Company came out of the burning with so little lost in comparison to that which was first reported.

[Since this was written we are in receipt of the following dispatch from Mr. E. G. Cowdery, dated at Milwaukee on November 3d: "Supplied all consumers last night. Running coal gas and water gas as usual today." All of which goes to show that our first information was substantially correct. Good enough.]

IT is announced that the proprietors of the Ishpeming (Mich.) Gas and Electric Light Company and the Ishpeming-Negaunee Electric Railroad Company have agreed on a plan of consolidation.

SUPERINTENDENT W. C. ADAMS, of the City Gas Works, Richmond, Va., is very earnest in his advocacy of the installation at that point of an auxiliary water gas plant. He is quite certain that a plant of the necessary capacity can be arranged for at a cost not to exceed $25,000.

BY a vote of 8 to 5 the City Council, of Salt Lake City, Utah, accepted the offer of E. H. Rollins & Sons, to purchase the 787 shares of stock owned by the city in the Salt Lake City Gas Company, for the bulk sum of $105,000. It is also reported that Rollins & Sons have succeeded in acquiring control of the Salt Lake Light, Heating and Power (Electric) Company and two local railways, with the intention of turning the same over to a syndicate that will operate the purchases as a common system.

GAS was turned into the new holder of the Buffalo (N. Y.) Gas Light Company on Sunday, October 30th. There was no appreciable hitch in the operation.

IT is said that the syndicate that has secured control of the plant of the Salt Lake City (Utah) Gas Light Company will expend $250,000 on the works.

THE authorities of San Rafael, Cal., have entered into a contract with the San Rafael Gas and Electric Light Company for the public arc lighting of the place, at the rate of $11 per lamp per month. The agreement is to run for two years.

THE Rosenheimer coterie, who have been nagging at the Standard Gas Company, of this city, since last November, and who, by-the way, have been soundly thrashed so far in all their attempts at hampering the Company, now threaten to institute a series of property damage suits, on the ground that the gas plant has depreciated rental values.

THE Atlanta (Ga.) authorities have adopted an ordinance providing for the appointment of a special committee to prepare and present to the next Legislature of the State a bill allowing the city to regulate the price and quality of gas sold in Atlanta.

OBITUARY—MR. PETER E. DE MILL.

We have to report the death (at Detroit, Mich., on the morning of Monday, October 31st) of Mr. Peter E. De Mill, who a score of years ago was a prominent figure in the gas business of this country. Deceased, who was born in this city November 18th, 1807, accompanied his parents on their removal to Connecticut, where the elder De Mill had purchased a farm. During his early youth he assisted his father on the farm, but on attaining his 18th year he came to New York to engage in mercantile affairs. Five years of store life in New York gained him a fund sufficient to journey westward, and in 1830 we find him located in Detroit, where he, in partnership with a Mr. Campbell, conducted a general business in merchandise and groceries. This partnership was dissolved in 1843, after which Mr. De Mill started a store in the town of Jackson, Mich. During his stay in Jackson (1843-50) he served two terms as Treasurer of Jackson county. In 1850 he returned to Detroit, and in the following year was chosen Treasurer of the Detroit Gas Light Company, with which Company he was identified up to 1877, when he retired to private life to enjoy the competence that his thrift had accumulated.

Deceased was one of the signers of the original call, issued from Detroit on March 12, 1873, that resulted in the formation of the present American Gas Light Association, and with Samuel Lewis and W. H. Williams, answered to his name at the Knickerbocker Cottage, in New York, April, 1873, representing there the Detroit Gas Light Company. It was on Mr. De Mill's motion that that meeting voted it was "expedient to organize a national Association of Companies and individuals engaged in supplying cities and towns with illuminating gas." He took very prominent part in the organization proceedings, and was elected First Vice-President at the initial meeting, that position carrying with it a place *ex officio* on the Executive Committee. At the meeting (New York) in the following October he was chosen Secretary and Treasurer, in addition to retaining the post of First Vice-President. At the second annual meeting (Brooklyn, 1874), under the new Constitution then adopted the offices of Secretary and Treasurer were separated, Mr. De Mill being chosen to the latter place, the late Mr. Chas. Nettleton assuming the Secretarial duties. Mr. De Mill's incumbency of the separate post of Treasurer, however, was not of long duration, and the dual offices were again vested in Mr. Nettleton on the occasion of the third annual meeting, New York, 1875. Shortly after this Mr. De Mill retired from active connection with the gas business, and his membership in the Association was taken up, we think, by Mr. E. M. Breese—originally the membership was held by the Gas Companies individually, the Companies naming some one to represent them at the annual meetings. From this record it will be seen that deceased was in reality a founder of the Association; and certain it is that he was very earnest in its behalf. To Mr. I. C. Baxter, of the Detroit Gas Company, we are indebted for the following respecting the domestic history of the deceased:

"In 1845 Mr. De Mill was married, in Detroit, to Miss Henrietta Marie Westbrook, a daughter of one of the prominent St. Clair pioneers. The fruits of that union were three children, all of whom are living—Mrs. W. H. Hurlburt, of Springfield, Mass.; Peter E. De Mill, Jr., of Detroit; and Mrs. George William Moore, of Detroit. Mr. De Mill had the usual educational advantages of the time during his boyhood, and they were indeed crude; but he had what was better—ambition, backed by sterling common sense. He wasted no time and gained for himself a goodly store of knowledge, not only of books but of the world. He was active, energetic, had more than his share of vitality, and never allowed misfortune to steal of his time and brains in worry. He was during his whole life a staunch Episcopalian, and for many years was treasurer of the diocese of Michigan. The late Judge Campbell was a member of his Sunday school class. He was at all times the same—no man coming in for special favor because of his prominence or wealth; and died as he lived, an honest, true hearted Christian."

THE AMERICAN GAS LIGHT JOURNAL

A. M. CALLENDER & CO.,
PROPRIETORS.

EDITOR—Jos. R. Thomas, C.E.
ASST. EDITOR—T. J. Cunningham.
MANAGER—C. E. Sanderson.

MONDAY, NOVEMBER 7, 1892.

The Market for Gas Securities.

The feature in the city gas share market for the week was the remarkable advance in Consolidated gas, which on Thursday last, on total sales of 9,145 shares for the day, moved up to 124½, a gain of 6½ points over the bid price of a week ago. To-day (Friday) the opening was made at 124 to 124½, and the outlook was that the price might sag some on realizing sales. Many rumors are current in explanation of this advance, the one most frequently repeated being that an increase in the capitalization is not improbable. Apart from anything of that sort, however, the intrinsic value of the stock is fully up to the current quotations. Other city shares show no particular change, the tendency being to better prices out of sympathy with Consolidated.

Brooklyn shares are somewhat weaker, without any particular reason therefor. Chicago gas opened to day at 95½ to 95¼, and there is no doubt that par will be made in it before long. Baltimore Consolidated is at 61¾ to 62, and both classes of Laclede gas have scored substantial advances. Bay State is a trifle lower, and San Francisco gas is on the upward move. We note a sale at auction of 50 shares Standard common, of this city, at 29½.

Gas Stocks.

Quotations by Geo. W. Close, Broker and Dealer in Gas Stocks,

16 WALL ST., NEW YORK CITY.

NOVEMBER 7.

☞ All communications will receive particular attention.
☞ The following quotations are based on the par value of $100 per share.

	Capital.	Par.	Bid	Asked
Consolidated	$35,430,000	100	124	124¼
Central	500,000	50	90	95
" Scrip	220,000	—	—	100
Equitable	4,000,000	100	162	167
" Bonds	1,000,000	—	106	108
Harlem, Bonds	170,000	—	—	—
Metropolitan, Bonds	658,000	—	110	115
Mutual	3,500,000	100	141	145
" Bonds	1,500,000	—	100	102
Municipal, Bonds	750,000		—	—
Northern		50	—	—
" Bonds	150,000	—	—	100
Standard Gas Co—				
Common Stock	5,000,000	100	35	—
Preferred	5,000,000	100	—	85
Yonkers		50	112	—
Richmond Co., S. I.	346,000	50	—	—
" Bonds	20,000	—	—	—
Gas Co's of Brooklyn.				
Brooklyn	2,000,000	25	130	135
Citizens	1,200,000	20	113⅞	114
" S. F. Bonds	320,000	1000	—	103
Equity Gas Light Co.	2,000,000	100	37	—
Bonds	1,000,000	—	—	85
Fulton Municipal	3,000,000	100	138	140
" Bonds	300,000		102	—
Peoples	1,000,000	10	95	97
" Bonds (7's)	368,000	—	100	—
" " (6's)	94,000	—	100	—
Metropolitan	870,000	100	115	118
" Bonds (5's)	70,000	—	100	—
Nassau	1,000,000	25	150	—
" Ctfs	700,000	1000	99	100
Williamsburgh	1,000,000	50	140	145
" Bonds	1,000,000	—	107	110
Out of Town Gas Companies.				
Boston United Gas Co.—				
1st Series S.F. Trust	7,000,000	1000	88⅛	88¾
2d " " "	3,000,000	1000	77½	78
Bay State Gas Co.—				
Stock	5,000,000	50	60¾	61¾
Income Bonds	2,000,000	1000	77	78
Buffalo Mutual, N. Y.	750,000	100	110	—
" Bonds	200,000	1000	95	100
Citizens, Newark	1,000,000	50	155	160
Chicago Gas Company.	25,000,000	100	95⅛	95¼
Chicago Gas Light & Coke Co.—				
G't'd Gold Bonds	7,650,000	1000	85	90½
Equitable Gas & Fuel Co., Chicago, Bonds	2,000,000	1000	—	101
People's Gas and Coke Co., Chicago—				
1st Mortgage	2,100,000	1000	103	—
2d "	2,500,000	1000	103	—
Consumers Gas Light Co., Jersey City	2,000,000	100	20	—
Bonds	600,000	1000	80	—
Cincinnati G. & C. Co.	7,000,000	100	192	—
Consumers Toronto	1,600,000	50	190	191
Central, S. F., Cal.			90	—
Capital, Sacramento, Cal			55	—
Consolidated, Balt.	11,000,000	100	61¾	62
" Bonds	6,400,000		107	107½
Citizens Gas Lt. Co., Rochester, N. Y.	500,000	—	85	101
Bonds	250,000		—	—
East River Gas Co., Long Island City	1,000,000	100	100	105
Bonds	500,000	100	100	102
Hartford, Conn.	750,000	25	120	128
Jersey City	750,000	20	180	200
Laclede Gas Light Co., St. Louis, Mo.—				
Common Stock	7,500,000	100	25¾	26
Preferred "	2,500,000	100	69	70
Bonds	9,034,400	1000	83⅞	84
Louisville, Ky.	2,570,000	50	125	130
Little Falls, N. Y.	50,000	100	—	100
" Bonds	25,000	—	100	103
Montreal, Canada	2,000,000	100	200	208
Memphis (Tenn.) Gas	750,000	100	40	—
" Bonds	240,000	100	103	—
New Haven, Conn.		25	200	—
Oakland, Cal.			39	—
Peoples, Jersey City		—	115	125
" " Bonds			—	—
Paterson, N. J.		25	99	102
Rochester, N. Y.		50	99	100
Syracuse, N. Y.	500,000	25	—	—
San Francisco Gas Co. San Francisco, Cal.	10,000,000	100	71	71⅛
Washington, D. C.	2,000,000	20	200	208
Wilmington, Del.		50	88	90

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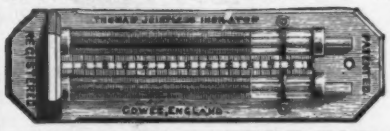

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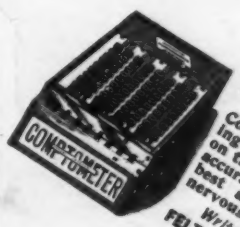

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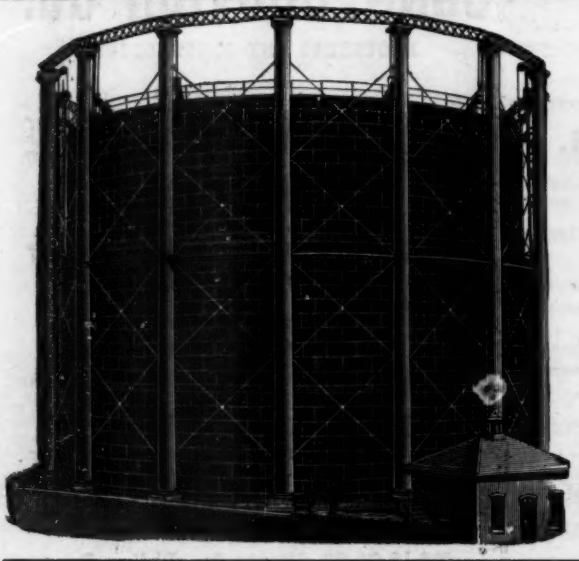

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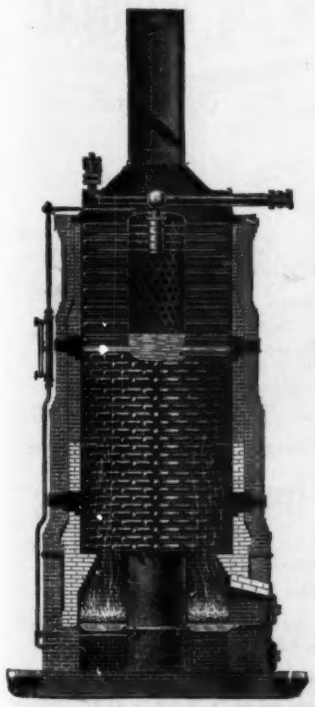

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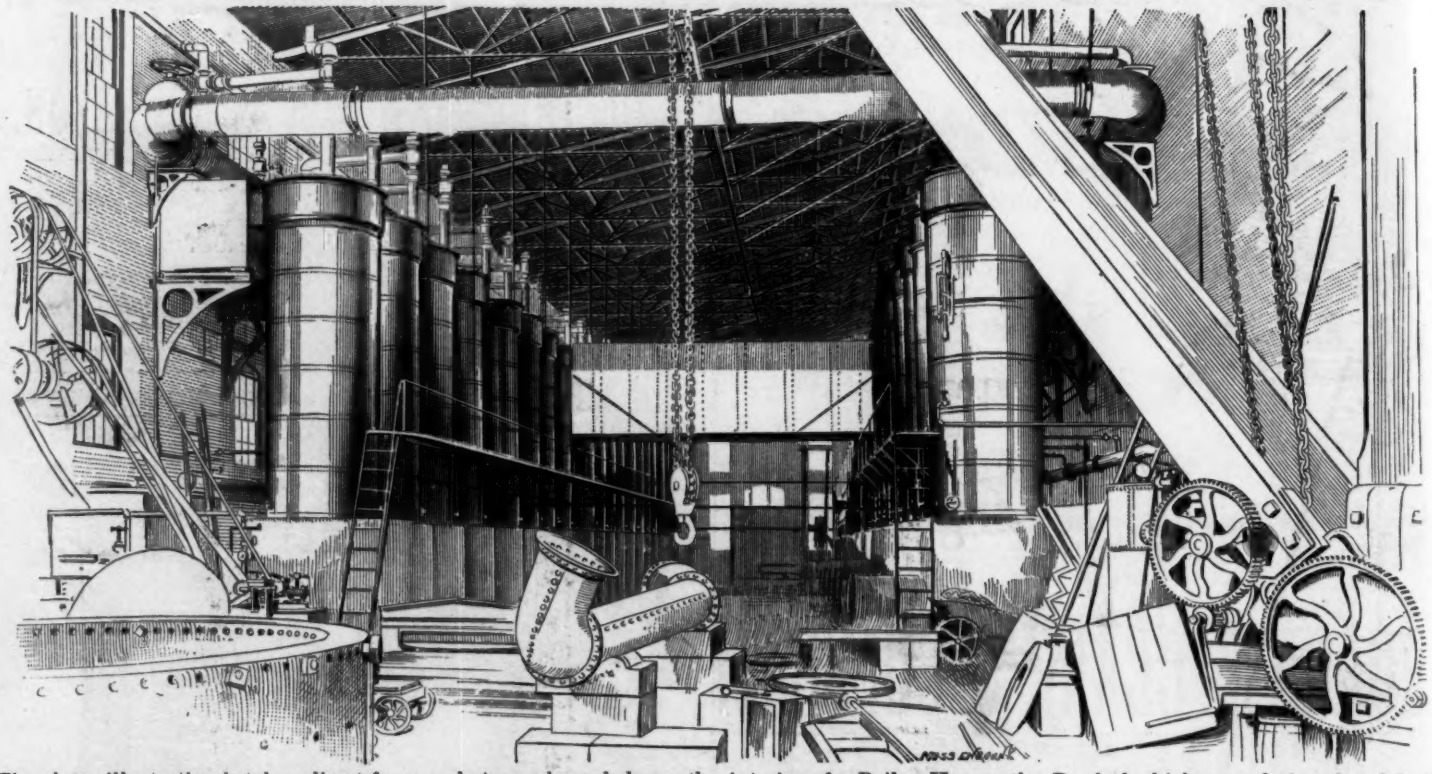

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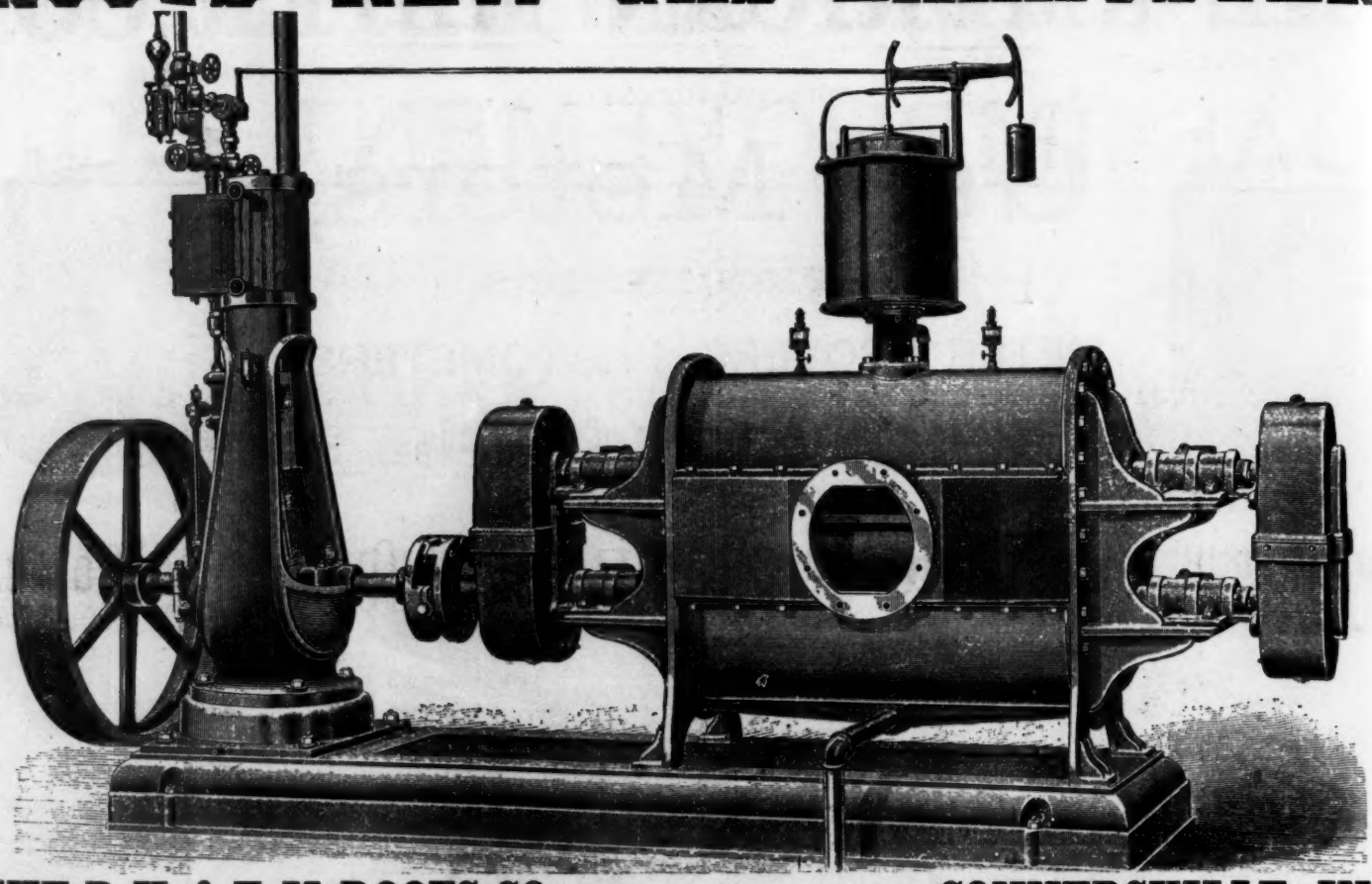

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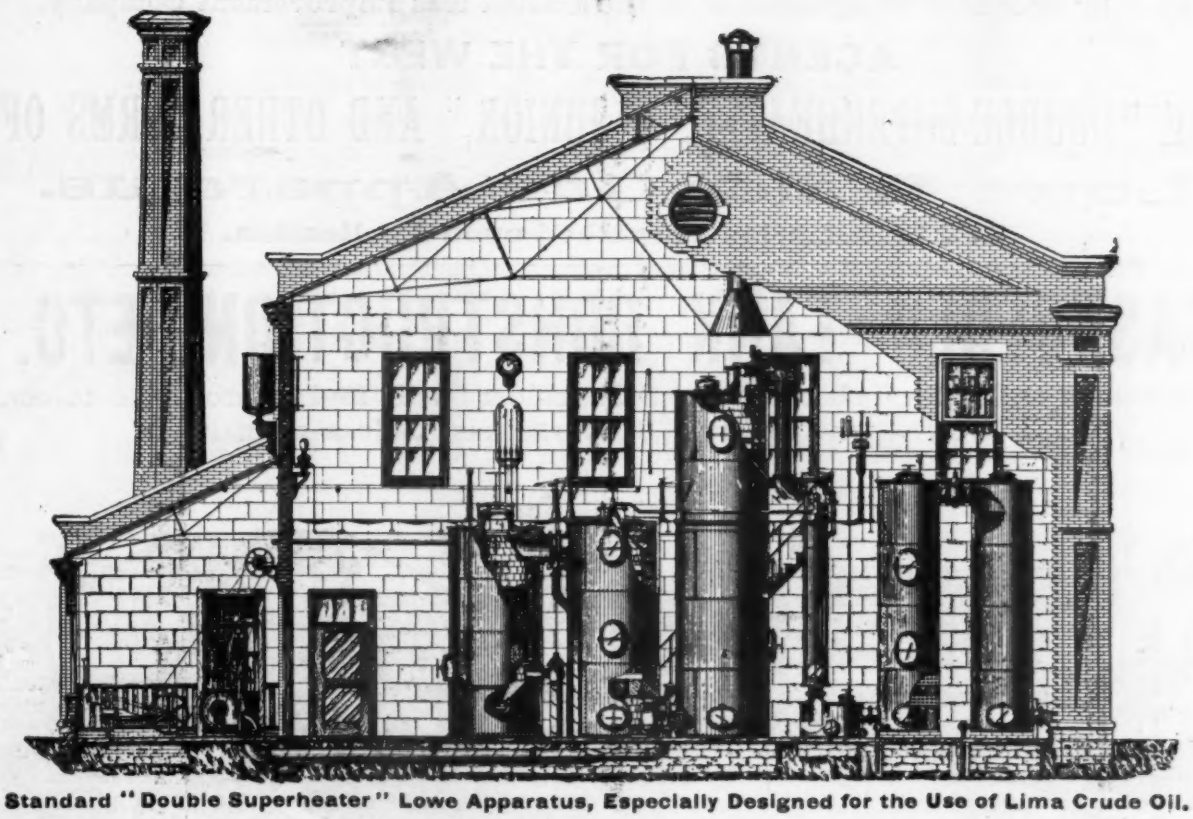

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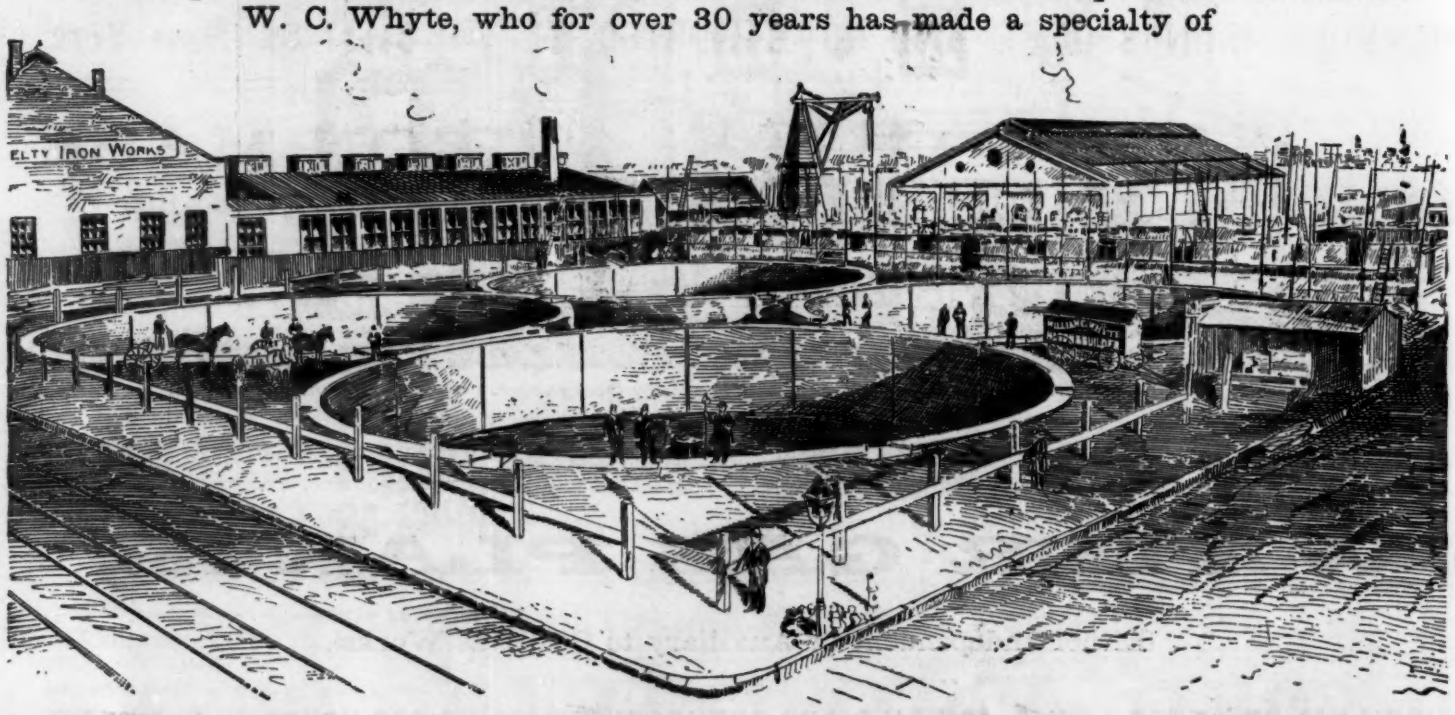

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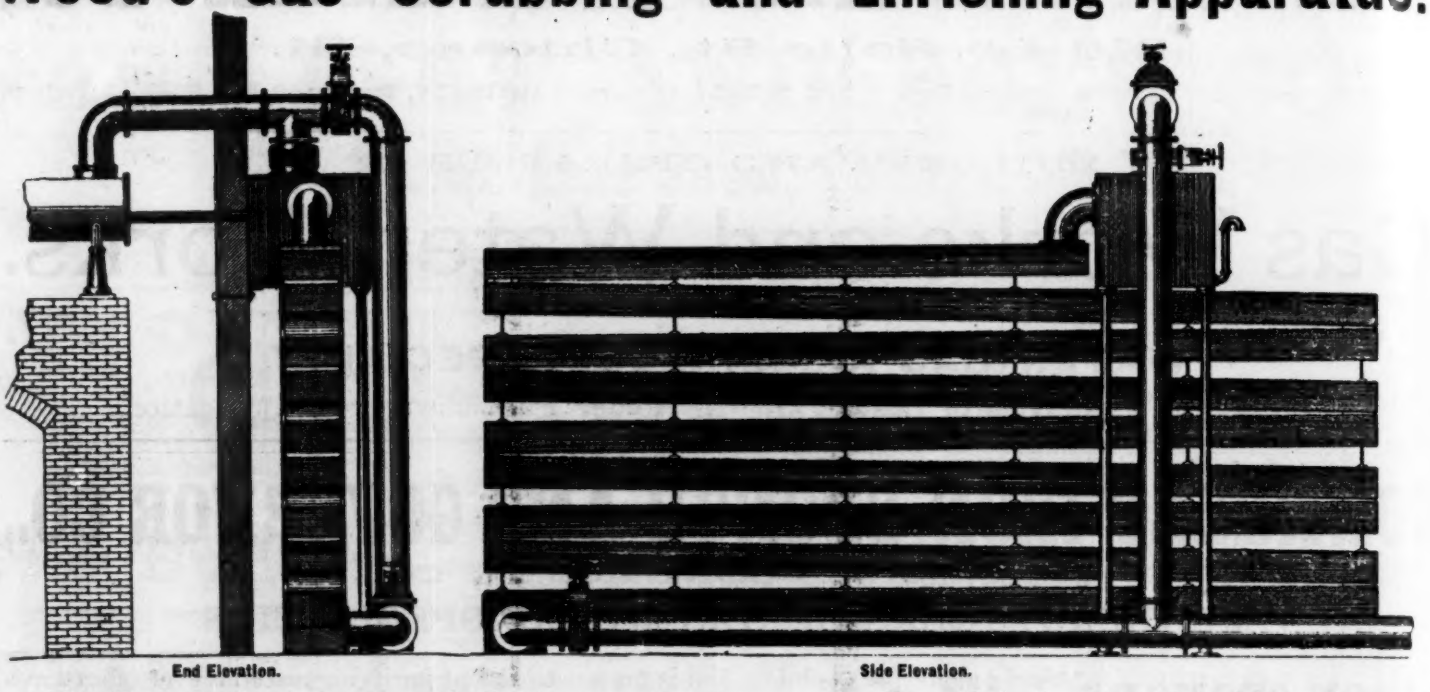

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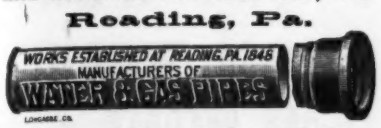

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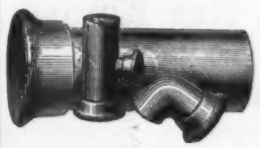

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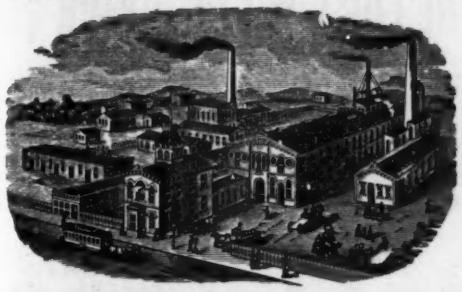

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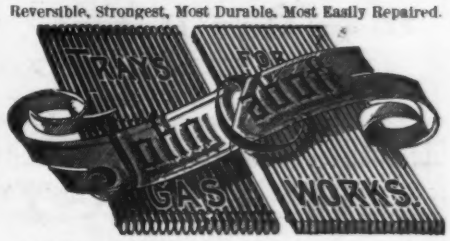

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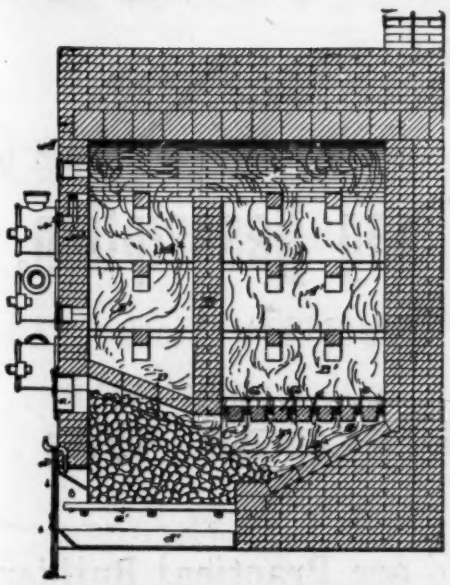

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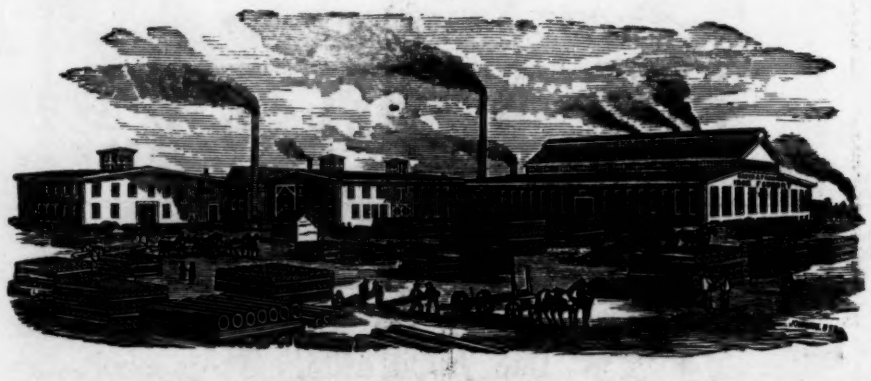

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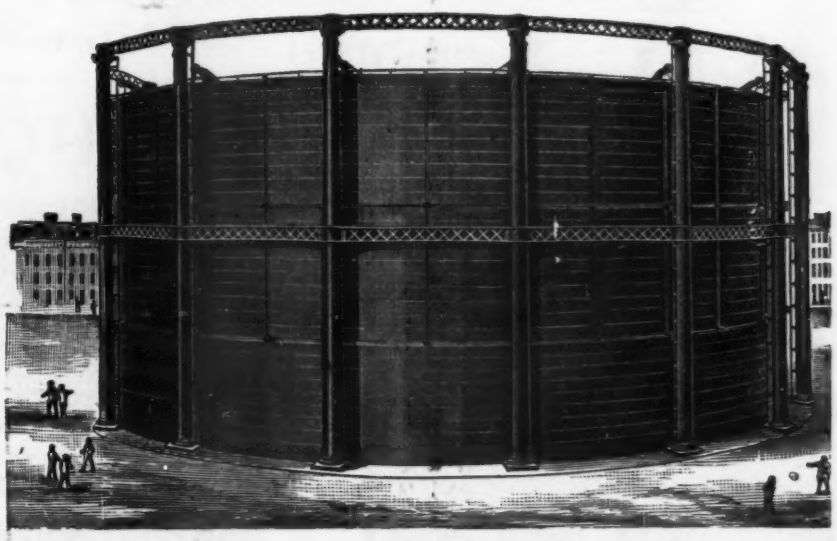

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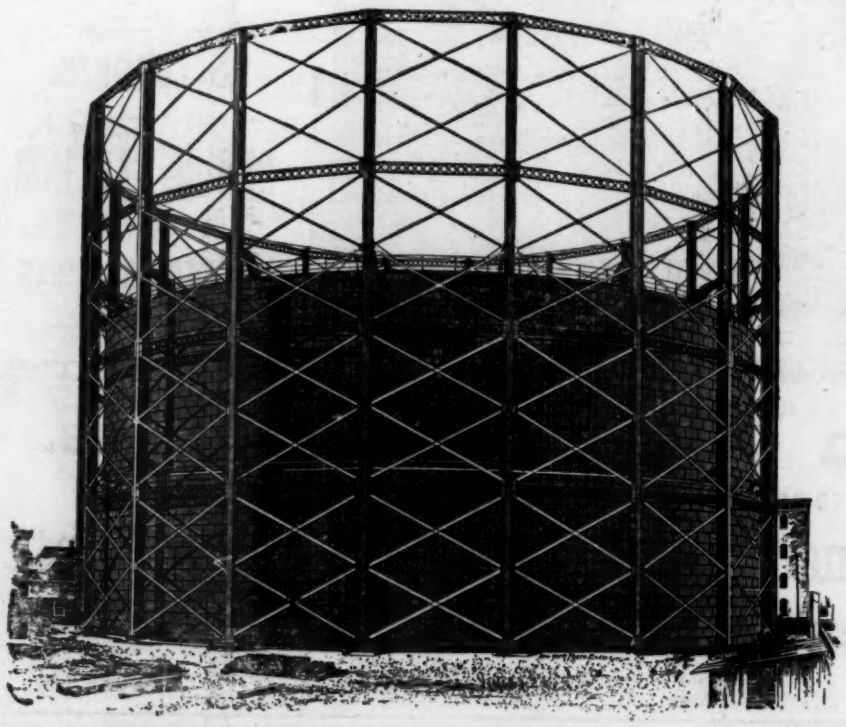

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	SIZE.		
Stove.	*Oven.*	*Broiler.*	*Top.*
31 inches high.	9¼ inches high.	10 inches high.	21 inches high.
17 inches wide.	15 inches wide.	15 inches wide.	16 inches wide.
	12½ inches deep.	12½ inches deep.	
	Length over extension shelves, 32 inches.		

This Stove has three Boiling Burners in the Top or Hot Plate, and single Oven Burner.

The consumption of this Stove is 35 cubic feet per hour, at 1½ inch pressure with all burners.

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BRIEFLY TOLD.

SOME POINTS IN THE INAUGURAL ADDRESS OF EX-PRESIDENT WHITE, OF THE AMERICAN ASSOCIATION.—Quite some time has passed since the last convention of the American Gas Light Association, but either the proceedings there were more than ordinarily interesting, or they took on something of an uncommon light, in that to our view the records of that gathering have been more talked about, and are being considered more studiously now than was usually the case with the history or records of other meetings of the Association. In casting about for a satisfactory explanation of this, we confess to be at a loss for the exciting causes. The proceedings were very much after the routine type, varied only here and there by minor punctuations. The paper list was also conventional, in that the grasping for the actual was blended with a desire for the realization of the immaterial; the hours of ease and sociability were enjoyed very much after the fashion of the hearty practice that has been the guide of the membership in those paths for all of the 20 years of life of the Association; and the interest in the meeting as a whole was often shown before with equal or exceeding fervor. With these material points confronting us, it is not to be wondered at that we are in somewhat of a quandary over why the Boston session and its memories should be still so vivid in the thoughts of many as shown by the frequent expr ssions that we hear from those who were there, as well as from some who were not there, respecting the meeting and its possible outcome.

About as good or as convincing a reason that we have heard on this score is that the meeting seemed to be all earnestness, and if such is the true ground of the accounting the Association can well pride itself that its future is to be greater than its past—satisfaction enough, surely, is to be extracted from that knowledge.

Whether or not these speculations (for speculations they must be, although we have studiously endeavored to have them untainted by the desire to cause the certainty to conform to the hypothesis) account for this, the bare fact remains that Captain White's inaugural message was stamped with the sincerity that is born of a simplicity backed by the desire not to be other than straightforward in his reference to the themes that he compassed. And this leads us to a consideration of the field that an address of this nature may cover, and of the difficulty of taking note of all the furrows therein. One not conversant with the art of practical composition will, as a rule, prefer a wide range of topics wherefrom to prepare an address, or a paper of a kindred nature, but not so with your practical "pencil pusher," who, in what he writes must, would he secure the respect of his reader, have brought out sharply some particular point. No; he does not care (in fact he dreads it) for the broad field of many subjects. A single one suits him far better. Thus it is, we claim, that a presidential message to one of our Associations is quite a task, if it is to secure eventually the approbation of the thoughtful and the attention of the incontemplative. Too many subjects have to be considered, unless one is satisfied to cause his paper to resemble an index or a catalogue, or, on the other hand, to have it swell out to the proportions of a several volumed history.

The Captain, however, in giving us quantity, has not failed to give us "points" also; hence he may be fairly congratulated on the results of his studies. Passing over the introduction, and also going by his clever reference to the powers of Mr. Edison as a prophet, we come to his good presentation of what gas men have accomplished for the industry in the way of increasing their output in the fields of cooking, heating and power, and of what they may further gain by applying themselves in that direction with even greater persistence. Having mentioned some of the methods devised and put in practice for furthering the use of gas for purposes other than lighting, many of

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